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SOUTH KENSINGTON MUSEUM ART HANDBOOKS.

EDITED BY WILLIAM MASKELL.

BRONZES.

These Handbooks are reprints of the dissertations prefixed to the large catalogues of the chief divisions of works of art in the Museum at South Kensington; arranged and so far abridged as to bring each into a portable shape. The Lords of the Committee of Council on Education having determined on the publication of them, the editor trusts that they will meet the purpose intended; namely, to be useful, not alone for the collections at South Kensington but for other collections, by enabling the public at a trifling cost to understand something of the history and character of the subjects treated of.

The authorities referred to in each book are given in the large catalogues; where will also be found detailed descriptions of the very numerous examples in the South Kensington Museum.

W. M.

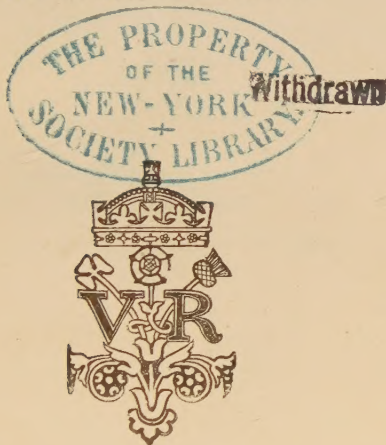
August, 1877.

BRONZES.

BY

C. DRURY E. FORTNUM, F.S.A.

WITH NUMEROUS WOODCUTS.



SCRIBNER, WELFORD, AND ARMSTRONG,
NEW YORK.

1877.

CHARLES DICKENS AND EVANS,
CRYSTAL PALACE PRESS.

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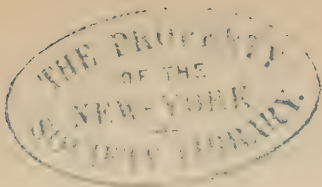
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The Department of Science and Art is indebted to MR. JOHN MURRAY and to MESSRS. SMITH AND ELDER for the use of the wood-blocks of several of the illustrations in this volume.



BRONZES.

CHAPTER I.

ON THE COMPOSITION OF BRONZE.

BRONZE, a composite metal, is identical with the *χαλκός* of the ancient Greeks, and the *æs* of the Romans ; words, however, which referred also to the pure copper and to brass, as far as that mixed metal was then known.

Bronze is an alloy of copper and tin in slightly varying proportions, with occasional, but seemingly unimportant, additions of silver, zinc, lead, and other simple metals. These last may be regarded as foreign to the true alloy rather than as necessary elements in its composition, although their presence may more or less influence its ductility and malleability. The normal composition of true bronze may be approximately fixed at nine portions of copper and one of tin ; but the quantity of tin may be said to vary from eight to ten per cent. "Gun metal" is of a similar composition.

This important alloy has been known and in use from a very early period, long before any written record of the world's history. We need not, therefore, delay to inquire into the mythical story that such a mixture of the metals was discovered by the Idæan

Dactyls, or first brought into use by the Telchines of Rhodes ; nor need we, for our present purpose, do more than allude to the story of that Cadmus, of the Phœnician occupancy of Egypt under the seventeenth dynasty, who sailed to Greece ; and by reason of the excellence of his weapons, formed of "Cadmian bronze," prevailed over his opponents and founded the Cadmian Thebes.

In the sacred writings Tubal Cain is the earliest mentioned as an instructor of artificers in working brass (bronze) and iron. But whatever truth may be at the foundation of these and similar histories, we have the evidence of the objects themselves to prove the wide spread and abundant use of bronze for the manufacture of weapons and tools, at a period so early as to be beyond any record, and which we can only now define as overlapping and succeeding the so-called "stone age."

There can be little doubt the art was brought into northern and eastern Europe from Asia ; and we may be equally assured that the composition of bronze was well known in Egypt, perhaps at a still more remote period. From thence its use may have spread to the European shores and islands of the Mediterranean, probably aided by, rather than originating with, the Phœnician people.

From those prehistoric times down to the present day, the continuous use and value of bronze have been known ; at first, in the production of weapons of war and for the chase, the improved successors of the celts and knives, spear-heads, scrapers, and the like, of flint and stone ; subsequently, for domestic and other utensils, and as a favourite and enduring material for the exercise of the sculptor's art. In our own day the use of bronze is comparatively less general than of old, for brass now arrogates the sway of the more costly and "eternal bronze." Brass, less expensive and less noble than its sister alloy, is composed also of copper, but allied with the cheaper metal, zinc, which replaces the tin in larger quantity.

Without entering into a minute and scientific inquiry as to the nature and technical modes of production and manufacture of these alloys of copper with tin, zinc, and other metals, it may be well to take a rapid view of their history, composition, and application.

To begin with the parent metal, copper. It is probable that long before any systematic mode of reduction or combination with other metals was known to the early inhabitants of various countries in which the mineral occurs, pure copper, or rather the metal found in its native state, was, by partial fusion and by hammering, or other simple means, fashioned into weapons and other objects for use in such districts as yielded this valuable material ready to hand.

We may reasonably assume that the use of copper in its native and unalloyed condition would have preceded the knowledge of its alloys with other metals: afterwards, the consequent modification of its properties, its very great ductility and malleability, together with the difficulty of fusion, qualities which render copper of the first importance for certain manufacturing purposes, would detract from its value as a material for the formation of weapons by a primitive people. Not that the use of unalloyed copper has ever ceased, but its value is in a different direction. The malleability which renders it too soft for weapons is peculiarly valuable in the formation of vessels of every variety of form, an use to which it has been applied in almost every age, and in none more so than in our own, when the requirements of chemical and other manufactures are met by the construction of enormous stills and refrigerating worms, boilers and evaporating pans of this metal. Acres of sheet copper protect our ships from the attacks of various marine creatures; and again in the production of the crowd of smaller objects, such as our tea-urns, stew-pans, kettles, and the like, vast quantities of copper are consumed.

It is worthy of observation that, from the evidence afforded by the buried remains of their civilisation, bronze seems to

have been used by preference in the production of culinary and other vessels for domestic use, even of large size, and copper in its purer state but rarely, during the flourishing periods of Egypt, Assyria, Greece, Etruria, and Rome. Not so, however, during the "Gothic" period of the twelfth, thirteenth, fourteenth, and fifteenth centuries, when bronze and bell metal, as well as "latten" or "electrum," were not less well known; for the majority of the admirably wrought objects for church use, such as reliquaries, chasses, monstrances, and mountings of heavy choir-books, &c., were of nearly pure copper, and heavily gilded with equally pure gold. So again, during the *renaissance* and subsequent period of decline, copper in beaten work (*repoussé*) was much used for vessels, many of which are of highly artistic form and ornamentation; as also for works of sculpture in *basso* and *alto rilievo*, and for the formation of figures on a solid core; for example, the great statue of S. Carlo Borromeo, which overlooks the lovely Lago Maggiore. Also, we must not forget the use of copper for coinage, and the production of medals struck in a die; nor its hitherto extensive use in the manufacture of copper plates for engraving.

The electro deposit, that ingeniously varied application of what, in our own memory, used to be merely a curious and striking demonstration of chemical or rather of "voltaic" action in the lecture-room, has now developed into various extensive branches of manufacture, and is of the greatest value in the reproduction of artistic objects in an enduring material. In England this method has been applied with singular success by the Messrs. Elkington, the late signor Franchi, and by many able French and German manufacturers in their respective countries.

An important series of reproductions in metal by this process is collected in the South Kensington museum, among which we may particularly note the celebrated gates of the baptistery at Florence, by Lorenzo Ghiberti; a remarkable work, of the exact size of the original. The Pisan gate, of bronze, is in the same

museum, and many other interesting works of smaller size, described in detail in the official catalogue.

Copper occurs in its native state in amorphous masses of considerable size, and in crystalline laminæ permeating the fissures of quartz veins. It is also found in combination with other substances, constituting the ores from which the larger supply of the metal is obtained. These ores are more or less abundantly distributed in almost every country of the old and new world. The island of Cyprus seems to have been one of the earliest sources known to the ancient classic writers, but perhaps the neighbourhood of Chalcis, in Eubœa, may have as old a claim. The mines of Spain, of Gaul, and of Anglesey, and probably those of Cornwall, were also known to the ancients; as was the existence of this metal in Tuscany and the south of Italy, in the Alps, and in Egypt, and various parts of Asia.

Pliny, from whom (as might be expected) we derive the greatest amount of information on the subject, tells us that three of the ores of copper (*lapides aërosi*) were known to him, namely, the *cadmia*, the *chalctis*, and the *aurichalcum* or *orichalcum*. How these varieties agree or correspond with the ores distinguished by mineralogists of the present day, it is hardly within our province now to inquire; nor can we do more than touch upon the large subject of their reduction into the metallic state. It has been argued, not without some probability, that the last of the ores mentioned by Pliny, and from which the golden-coloured Corinthian bronze is said to have been produced, may have contained a larger or smaller quantity of calamine, or perhaps of the sulphuret of zinc ("black jack"), which gave a yellow or brassy colour to the metal; a portion in fact of true brass.

We have abundant proof that the mines of copper ore existing in our own country were worked by the Romans. Perhaps the most distinct evidence is to be found in the island of Anglesey, where not only the stone pounders or hammers with which they (and probably still earlier miners) detached the ore from the rock

(previously heated and then disintegrated by the action of cold water, as described by Tacitus) have been discovered, but cakes also of the fused metal from time to time and in various places. One of these cakes, mentioned by Pennant in his tour in Wales, is inscribed with the words SOCIO · ROMÆ., and in smaller letters · NATSOL ·. Others have been found on the side of the Parys mountain; these, flat and circular in shape, are of pure copper, each weighing about 29 lb. 6 oz. It has been argued that these *massæ* must have each represented a value approaching to 600*l.* of our money, allowing for the difficulty and labour of working with the primitive appliances then at command; a conclusion which may perhaps be open to some question.

The most important and abundant mineral of copper is the yellow double sulphuret of copper and iron, known as copper pyrites, though not so rich in that metal as the rarer gray ore, the simple sulphuret. It also occurs in smaller quantity as a carbonate, the harder and closer varieties of which are well known as the beautiful mineral called malachite, the product of Siberian, of Australian, and some other mines; also, but rarely, as the black oxide. The other minerals of copper need not detain us, nor may we attempt more than a slight explanation of the interesting process for its reduction to the metallic state.

First, after the mechanical operations of separating from the quartz and other valueless substances occurring in the lode, by pounding, washing, milling, &c., the ore is exposed to the action of flame in the roasting furnace, by which a portion of the sulphur is burned off, leaving the remainder in the state of a sub-sulphate of the oxides of copper and iron. By fusion with silicious mineral and some unroasted ore, the iron is separated as a slag; and repeated and long-continued roasting in the reverberatory furnace supervenes to remove the sulphur and to oxidise.

The next process is the reduction to the metallic state, by driving off oxygen with the aid of charcoal in the reducing or blast furnace. The metal still contains many impurities, which

are removed by the tedious and delicate operations of refining, after which it is run out into ingots or bars of the purified metal.

Next in importance to our subject, is Tin, a metal known from unrecorded times, which still retains its place and value in the manufacturing arts, particularly in connection with copper and with lead. It was known as *κασσίτερος* (*kassiteros*) to Homer and to Hesiod, who describe the fusing of the mineral. The ores of copper are abundantly distributed; not so those of tin, which are of more local occurrence. Many remarkable and interesting subjects of inquiry arise from the fact that our own country is, and has been from the earliest ages, one of the chief sources from which this valuable metal has been derived. Unacquainted, as it would seem, with zinc in its metallic state, and only partially as an alloy of copper, the ancients well knew the use of its more noble fellow-metal, tin. The Phœnicians of old traded largely with England, taking their mineral cargoes from the Devon and Cornish ports, as they did also from Spain: and it seems probable that through them, the sea-carriers of the ancient world, the countries bordering on the Mediterranean, and perhaps even Egypt and Assyria, were supplied with ore; this trade extending back to a very remote period. We must not, however, forget that from Arabia, from Persia, and perhaps from northern India, supplies may have been occasionally obtained. The *Cassiterides*, islands the position of which was kept secret by the Phœnicians but which are supposed to have been the Scilly group, or even a portion of the Cornish coast, were a source whence they conveyed tin to the Mediterranean shores. Diodorus and Strabo tell us that it was brought to Marseilles from Britain: and Pliny speaks of this metal—the *stannum* or “white lead,” the *kassiteros* of Homer—as being found also in Lusitania and Gallicia. In Ezekiel we read that the Tyrians received tin from Tarshish. It is first mentioned by Moses, in Numbers xxxi. 22, as part of the spoil of the Midianites, *circa* 1452 B.C. Isaiah speaks of it as an alloy for other metals.

Tin also occurs in Ireland, in Bohemia and Saxony, in Galicia and the north of Portugal, and in Sweden. In Asia it is found in the island of Banca, the peninsula of Malacca, in the western Australian colonies, and elsewhere in smaller quantities.

The principal mineral of tin is the oxide, which occurs in veins and also in rounded grains as "stream tin;" the latter is generally not so impure, the vein tin being more or less accompanied by iron, copper, arsenic, &c. Its reduction to the metallic state is a much more simple process than that for copper, tin being easily fused and the oxygen readily driven off. Indeed, the primitive method seems to have been nothing more than making a pile of the mineral mixed with small wood, firing it and receiving the metal in a stone trough beneath.

Interesting evidences of the early working for tin ore have been discovered at Carnon, where a pick formed of deer horn fixed in its own handle was unearthed, at a depth of many feet from the surface, and associated with bones of extinct animals. Other picks, as also bronze celts, together with wooden shovels of Roman and of long preceding time, have been discovered in the stream tin workings of Cornwall. Blocks of tin are rarely found in the hoards of the bronze period, but some were discovered with bronze sickles at Hermannstadt in Transylvania.

Bronze is produced by the melting together of these two metals, copper and tin; differing in colour from either of its constituent elements, as also in various other qualities. In place of two metals, one of a ruby colour, the other white, we have a closer substance of a golden brown. It is also a well-known fact that the bulk occupied by the same weight of the alloy is considerably less than that occupied by the two metals previous to their combination, the result being a great increase in hardness, perhaps due to the interpenetration of their atoms. Their aggregate fusibility is, moreover, much increased.

We have already stated that the normal relative proportions of the two metals is nine to one, but many variations of these pro-

portions have been from time to time purposely approved, or in other cases may have arisen from the loss of tin during the process of fusion, or by the presence of other metals in the ores. One great difficulty in the fusion of bronze arises from the great volatility of tin by the absorption of oxygen when melted, a property which the presence of copper does not obviate. It is necessary, therefore, to observe great caution in the fusing and casting, which should be effected as rapidly as possible, so that the proportion of tin remaining in the alloy may not be diminished to too low a standard.

The tools of the ancient Egyptians were generally formed of a bronze containing 12 parts of tin to 88 of copper, doubtless hardened and tempered, even to elasticity, by hammering, &c.

Mr. J. A. Phillips tells us that experiments made by him upon antique coins and other bronze objects yielded the following results. The Greek coins of Hiero and Alexander are of pure bronze, containing only tin and copper. The early Roman contain some lead. About the period of Augustus, and subsequently, zinc is found in the imperial coinage. During the lower empire silver, varying from one to eight per cent., is also found. The general result of other analyses of several examples of Greek and Roman bronze has shown a composition of 88 or 90 parts of copper to 12 or 10 of tin ; some specimens yielding a very small, and probably accidental, quantity of silver.

According to Pliny, who owns to the inferiority of the Roman bronze of his time, the metal used for statues was composed of a mixture of old and new copper melted together ; to every hundred part by weight adding twelve and a half of another mixture, made of equal parts of lead and tin : and the whole fused. The addition of lead would probably be to increase the fusibility of the mixture, and as an economical substitute for the full proportion of tin. It would seem to have been an acknowledged adulteration of the tin received from Spain. Pliny and other classic authors describe also various kinds of bronze used

by the ancient sculptors and founders, for the origin of some of which curious histories are given, particularly that of the Corinthian metal. The base gold, known as Corinthian metal at that time, from which vessels for the table, &c., were made, could have no relation with bronze except, perhaps, agreement in colour with the Grecian statues called Corinthian by the Roman dilettanti.

This *Aes Corinthiacum*, stated to have been accidentally formed during the burning of Corinth by Lucius Mummius, B.C. 146, by the fusion together of various metals, chiefly bronze, but intermingled with silver and gold, was in all likelihood a well-proportioned mixture of good metal used by the sculptors and bronzists of that city in days anterior to the period of the conflagration. This supposition is, moreover, borne out by the fact that some of the works stated by the ancient writers to have been formed of this bronze were executed long previous to the second century before Christ. The common history of the much-prized Corinthian bronze must therefore be little more than mythical, and perhaps the so-called golden colour may have been only that which is now seen upon the uncorroded surfaces of some of the Greek bronzes in the British and other museums: among others upon the justly celebrated bronzes of Siris, the analysis of which corresponded with that of a Greek helmet, with nails from the treasury of Atreus, and with some early Corinthian coins, viz. 88 parts of copper and 12 of tin.

Again, the fact that Pliny specifies three distinctly known varieties of the Corinthian bronze would prove that they were purposely produced, and not the accidental result of a promiscuous fusion. He mentions the white (*candidum*), from the large quantity of silver in its composition; the golden, from the admixture of that metal (a doubtful statement), and thus formed of equal portions of the several metals. But in all this the Roman naturalist merely displays his want of acute knowledge of the true nature of the *Aes Corinthiacum*, which may probably have been

kept secret by the metallurgists of the Isthmian city. Other varieties of this bronze are alluded to by Pliny, as the *Aes nigrum*, &c.

The *hepatizon* was another variety of bronze, much esteemed by the ancients for the rich liver colour which it took. This, in all probability, was entirely free from any admixture of zinc, and perhaps contained a somewhat smaller proportion of tin than the Corinthian. In colour and in other respects it probably assimilated to the fine rich bronze used by the Florentine artists of the fifteenth and sixteenth centuries. In the estimation of the ancients this mixture would seem to have taken an intermediate place between the Delian and Aeginetan and the richer Corinthian bronze. But the *hepatizon* could only have attained its liver colour on the surface, and was probably the result of a "pickle," the composition of which was known only to the bronzists, who mystified inquirers by ascribing it to the action of the furnace alone.

It is also highly probable that the golden variety may have been formed by the admixture of more or less of the mineral calamine (the native carbonate of zinc), known to the ancients as imparting a golden colour when fused with copper. Of this mineral, the *cadmia* of Pliny's day, we shall speak further when treating of zinc and brass.

Delos was, in the early time, noted for the *Aes Deliacum* produced by the skilful metallists of that island, to which artists and those requiring work in bronze flocked from all countries. Myron was the great patron of the Delian alloy, which has been supposed to be of too high a tone of colour. The bronze made at Aegina rivalled that of Delos, and was adopted by Polycleitus for his works in metal. A great number of able artists and founders seem to have carried on the work upon that island.

Whatever may have been the original colour of these several varieties, the oxidising action of the atmosphere must soon have changed the glittering metal into a coloured coating, which also

varied with the composition of the metal and the nature of the atmosphere to which it was exposed.

The composition of the bronze in use during the Byzantine period, as also by various artists of the *renaissance* in Italy, Germany, and elsewhere, doubtless varied considerably, as may be noticed from the colour of the metal in their different works. We know also from Cellini's vivid description of the casting of the Perseus, how almost anything that would melt was cast into the caldron to make up for the loss of tin by the insufficiency of the fire to liquefy the mass.

That the use of zinc increased is also proved by the writings of Theophilus in the eleventh century. He, moreover, defines brass as *aes* or *aurichalcum*, and tells us how to mix grained copper with calamine in the crucible, which on fusion yields *aes* ; but that if the *aes* is to be gilded it must be made from fine copper purified from lead ; this yields the *aurichalcum*, whereas from the unrefined copper the more ordinary *aes* is made, which will not take the gold. He also informs us that both silver and pure copper are easier to gild than *aurichalcum*. We may thus account for the frequent use of copper in making the richly gilt monstres, reliquaries, and other church vessels and objects of the twelfth, thirteenth, and fourteenth centuries.

The bronze used in many of the works of the earlier period of the *renaissance* varies considerably, but is for the most part of good quality, there being no disposition on the part of the artists, who were so commonly their own founders, to cheapen the metal by admixture of an inferior alloy, and thereby to injure the rich surface effect of their castings. The works executed by Donatello, Verrocchio, Pollaiuolo, by Riccio, and the Lombardi are all of rich metal. So also are the admirable casts in bronze (five of which were unfortunately melted down by order of the revolutionary government of France) made by Primaticcio, from the then most celebrated statues of antiquity, by order of Francis I. and which now adorn the gardens of the Tuileries. The addition

of lead and zinc was only in small quantity; and even later we find that the brothers Keller, who executed numerous works in bronze for Louis XIV. at Versailles and elsewhere, were extremely careful as to the composition of their metal, which was also of fine quality. Analysis has proved it to be composed of—

Copper	-	-	-	-	91'68	to	91'40
Tin	-	-	-	-	1'70	„	2'32
Zinc	-	-	-	-	4'93	„	5'53
Lead	-	-	-	-	1'07	„	1'37

The bronze statue of Louis XV. is composed of an alloy of less value, viz. :

Copper	-	-	82'45
Zinc	-	-	10'30
Tin	-	-	4'10
Lead	-	-	3'15

Sir Humphry Davy recommended for large works 10 parts² of copper to 1 of tin.

The composition of gun metal has varied from the time when it was so much encouraged by queen Elizabeth. In olden times the typical proportions were 100 copper to 12 tin. In 1614, according to Diego Ufano, the following proportions were variously used by different gun founders :

Copper	-	160	100	100	100
Tin	-	10	20	8	8
Brass	-	8	5	5	0

Our later mixture is of 90 copper and 10 tin.

Bell metal also varies, the introduction of silver and other metals having been supposed to produce effects upon the sound. Perhaps the proportions of—

78 parts of copper, or	-	80
and 22 „ tin, or	-	20

may be considered as nearly typical. Theophilus tells us that to the copper one-fifth part of tin is added to make bell metal, the details for the casting of which he also gives.

For medals a good alloy is formed by the fusion of

Copper	-	-	-	88
Tin	-	-	-	10
Zinc	-	-	-	2

Another mixture is of—

Copper	-	-	90	or	92
Tin	-	-	8	„	10

lead in small quantity being sometimes added to increase the fluidity.

We are not aware of any traces of zinc having been discovered in the bronze tools and weapons of Egypt or of Greece, neither has it been found in any appreciable quantity in European implements of the bronze period. There can be little doubt that zinc was indirectly known to the Romans, although their acquaintance with it in a simple metallic state must have been very limited. Strabo and Aristotle speak of an earth, and Pliny tells us that certain mines produced ores, which on smelting yielded a golden-coloured metal, highly esteemed, and that it was much regretted when lost by the exhaustion of the lodes. These ores were probably the copper pyrites, with which a considerable quantity of “blende,” the sulphuret of zinc, occurred, as is frequently the case in our Cornish and other mines; or the mineral may have contained some considerable portion of the earth known to the ancients as *cadmia*, in all probability the calamine of mineralogists (native carbonate of zinc), which, when added to copper in a state of fusion, gave it a yellow colour, producing the rich-looking metal known as *aurichalcum*, and probably similar to the *ὀρείχαλκος* of Strabo.

The bishops Ambrosius of Milan (A.D. 374–397), Primasius of Adrumetum (sixth century), and Isidore of Seville (*circa* 570–636), refer in their writings to a substance, the addition of which to copper gave it a yellow colour: and we find that many of the objects for church use, in the Rhenish Byzantine and subsequent periods of art, are formed of a bronze of yellow colour, w^t

probably contains a considerable mixture of zinc. We have already referred to the *aes* and *aurichalcum* of the monk Theophilus; varieties, in fact, of brass, produced with the calamine by a nearly similar process to that referred to by the ancient classic writers.

Paracelsus, the Swiss physician (1493-1541), speaks of the metal *zinc*. It is the *contrefeyn* of the Saxon metallurgist Agricola (1494-1555), and Robert Boyle, the philosopher, refers to it as *speltrum*. In 1721 Henckel procured zinc in the metallic state from calamine. Van Swab, in 1742, reduced it from Swedish ores, and in 1746 Marsgraf published a method for its reduction. The first works in England seem to have been those of Champion, near Bristol, about 1760, where the metal was reduced from its ores and sent into Birmingham under the name of *zinc* or *spelter*.

The more important minerals of zinc are the sulphuret, known as zinc blende and "black jack," and the native carbonate, calamine: both of these minerals are more or less widely distributed. The former is reduced by first roasting in contact with the air, to burn off the sulphur, and then fusing in contact with carboniferous substances, as charcoal, &c. The metal, which burns and volatilises at a comparatively low temperature, is conveyed in the form of vapour from the closed crucible by a descending iron tube into water, at the bottom of which it is deposited in cakes—the "spelter" of commerce.

Brass, a mixture now so important in manufactures, has been more or less known throughout Europe, in slightly different varieties, under the names of *electrum* and *latone*, used by the early writers as synonymous with *orichalcum* and *aurichalcum*, *laiton* (Fr.), *latten* (Ang.), pinchbeck, tombac, Corinthian metal, prince's metal, or-molu, mosaic gold, similor, *glanzgold*, &c. The white copper of China, speculum metal, and the white alloys known as nickel and German silver, albata and Britannia metal, &c., are varying mixtures of copper with tin, nickel, zinc, lead, &c. The relative proportions to make the hard yellow

brass may be stated generally at 70 of copper to 30 of zinc ; for red brass, 80 copper to 20 of zinc; and for brass wire, which must be tenacious and somewhat ductile, 70 copper, 30 zinc, and some lead.

Mines of "latten" are referred to in the time of Henry VI., but the manufacture seems to have taken a definite form in England under the encouragement of queen Elizabeth, who, in 1563, granted certain rights, by patent, over the *calamine* found in this country and in Ireland, to William Humphrey, her assay master, who was in partnership with one Christopher Shutz. This man was experienced not only in the finding of that mineral, but in its use for the production of the mixed metal called *latten* or *brass*. A corporation was afterwards formed, and joined by some of the leading nobility, under the name of the "Society for the mineral and battery works," 1568. In 1650 one Demetrius, a German, had a large work in Surrey, and others existed near London and in Nottingham ; but the trade declined in 1670, and did not recover till early in the next century, when, in 1708, an act was passed, in answer to a petition made by the brass-workers for encouragement, repealing certain export duties on copper and on brass wire. It greatly revived about 1720, aided by and encouraging the development of copper-mining operations in Cornwall. About 1740 the Turner family introduced the manufacture into Birmingham, which has since become the capital of this extensive branch of industry.

The method of producing the finest brass is by reducing calamine to powder, sifting, and washing ; it is then mixed with charcoal and calcined ; again pounded with charcoal, it is mixed with the requisite quantity of copper in the form of shot. Tightly pressed into a crucible and luted down, it is exposed to a strong heat for the purpose of melting the copper, which, combining with the disengaged zinc, is poured into iron ingot moulds in the state of liquid brass. Variations of this and of other methods of fabrication are adopted in Germany and elsewhere.

CHAPTER II.

ON THE FASHIONING AND MANIPULATION OF BRONZE.

Casting, etc.

BEFORE inquiring into the ancient history of works either beaten or cast, it may be well to give a brief description of the more common and general process adopted for casting a statue or other object of considerable size in bronze. When lightness is requisite, as also usually with the view to the economy of metal, such works are not made solid but are cast over a central and removable core. To make this is the first care, and accordingly it is built up to the rude outline, but smaller than the statue or other object to be moulded upon it. A material is employed, composed generally of modelling clay mixed with pounded brick and plaster of Paris, in proportions varying with the circumstances and the experience of the artist. When fashioned it is slowly and carefully dried, the last moisture being driven from it by baking in an oven. Upon this core, which must necessarily correspond with the artist's conception or design for the work he is about to model, and which, in the case of a large statue, is further supported by iron bars and framing, modelling wax is overlaid of a thickness in accordance with the requirements for strength, and having regard to size, action, &c. The sculptor now works upon this wax, modelling his figure to the utmost of his art, and with all the elaboration which he wishes to bestow

upon the details. It is, in fact, the finished statue as it leaves his hands, but of wax, to be replaced by bronze. Outside this the mould has to be formed, and here also the greatest care is necessary that every minute detail shall be filled in with the composition, without the slightest disturbance to the form, or abrasion of the finished waxen surface. For this purpose the mixture must be somewhat liquid, and evenly applied, care being taken that no air be left in bubbles. It is generally a composition of dried clay and pounded crucibles with some plaster of Paris intimately mixed, ground, sifted, &c., and rubbed up with water to the consistence of cream. This is first washed upon the surface in a thin coat, penetrating every minute intaglio, and then gradually, as it dries, thickened by other layers until a sufficient substance be obtained. Upon this, again, a stouter coating of coarser quality must be formed to sustain the inner mould and bear the weight of metal. Small rods of bronze have also been previously inserted in the core, which, standing out through the wax, will leave their other ends imbedded in the mould; the object of these is to sustain both core and mould in their relative positions, without the slightest movement, when the wax form has been melted from between them. The whole, after slow and careful drying, is then firmly fixed in proper position within an oven specially prepared, fire is kindled till the mass is heated, and the wax which was within has flowed out in a liquid state from every corner. Ducts or vents have been made in various places to permit the escape of air, when the liquid metal shall be poured in. We thus have left, thoroughly baked and to be firmly fixed in the casting-pit, bedded in sand, the outer mould, within which the core is steadily sustained, and between them the now empty space which represents the statue. Meanwhile the metal has been duly mixed and fused in its proper furnace, the requisite "ingates," or conduits, have been formed, and the critical moment has arrived.

Who that has read Cellini's graphic account of his difficulties

in the casting of the Perseus will not sympathise with the anxieties of the artist, directing all these operations by his own mind, and working at them with his own hand? Who cannot enter into the spirit of this exciting moment on reading Schiller's vivid word-picture of the founding of the bell?

The bath of metal, glowing like sun-lit gold, is tapped, and the liquid steadily pours into the mould, filling every line and detail which the wax had occupied, closing the ducts by which the air was forced, sighing from before it, rising in the vacant space which, open to receive, is now gorged to the full—enough! the bronze is cast, and we may rest.

But woe betide if any moisture has remained within the core of the mould, or, if the air vents are insufficient for its escape, mixed with the gaseous emanations from the melted metal; the mould is rent, the work is spoiled, and the liquid fire is vomited forth in scalding showers among the unhappy workmen.

After cooling, the mould has to be broken carefully away, the core raked out, and all projections (as of the rods inserted to connect the core and mould), superfluous metals from the ducts and conduits, and asperities in general, must be removed. The artist's model is there before him, not in wax as he left it, but in a more enduring form. This is the process known as "*à la cire perdue*," the almost constant practice for small and for large works by the artists of the *renaissance* and earlier ages.

Should the work, however, be required in duplicate, or the cast from an existing statue be desired, or, as in casting of smaller works, many times repeated, other methods are to be employed. In the first case, a cast in plaster of Paris made in divisions must be taken from the model, which may be of clay, and sheets of moulding wax are then carefully pressed into every interstice and hollow of the mould, and kept of even thickness. Generally beginning at the feet, the mould, statue, and core are thus built up together, jointing the pieces of the former as they

are lined with wax, and filling in the middle with a semi-liquid composition to form the core.

For larger works the present method is to build up the mould, lining it with modelling clay of the thickness required for the metal, inside which the core is also built up ; the mould is then detached in pieces and, its clay lining being removed, is again set up in the same position, leaving an empty space between it and the core, which the liquid metal is to fill. For smaller works, to be frequently repeated, a more permanent mould is adopted, formed upon a carefully executed model or pattern piece.

Our object is to give a general idea of the mode of casting in bronze, rather than to enter into all the details of its varied method as practised by different artists at various times, and by different founders of our own day, many of whom have adopted special arrangements applicable to the works upon which they may have been engaged. Thus, moulds of plaster of Paris have been made directly upon leaves and sprays of trees and flowers, which, charred in the furnace, have been readily shaken out in the form of charcoal dust ; the liquid metal has then been poured in and the mould broken to remove the casting.

Casting in sand is not so applicable to works in the round, though much used for models in *rilievo*.

After removal from the mould and abstraction of the core, a greater or less amount of finishing is required upon the work, depending upon the degree of elaboration bestowed by the artist upon the wax or clay model, and the success with which the casting has been effected. Whatever in the way of filing, chiselling, chasing, punching, or polishing is done to the bronze should be the work of the master's hand, or at least under his immediate supervision. In this consists much of the artistic charm of the earlier *renaissance* works, which in so many cases are, with the exception of the removal of asperities, in the state in which they left the mould. The sculptor's wax model, upon which he has bestowed his painstaking thought and art, and which, like the

painter's finished sketch, bears the reflex of the artist's mind, is simply changed into an enduring material, to which time and its modeller's own hand have imparted only a richer tone of surface colour. Unfortunately the processes of finishing are now too frequently delegated to other hands, dexterous perhaps in the manipulation of tools, but having neither the experience nor ability to comprehend the spirit of the sculptor's model.

Groups and figures in violent action are generally cast in different pieces, which are joined by soldering or by dovetailing : the joints having been securely fixed in a surrounding bed the melted metal is poured in, and the work carefully filed down to an evenness of surface. The casting of works in *rilievo*, when large and the figures much raised in relief, is effected in a nearly similar manner, excepting that the core is more independent of the model. Sand-casting is only applicable to works in lower relief and free from undercutting.

In bronze, and in latten or soft brass, many works have also been produced by hammering ; the *sphyrelaton* or *toreutic* work of the ancients (of which we shall have further occasion to speak), the *repoussé*, or beaten work, of our own day. But the pure copper being more ductile and malleable than its alloys is better adapted to this class of work, although the ancients for the most part fashioned their unsurpassed hammered works in a malleable bronze.

This beaten work is produced on the same principle as that of the goldsmith. The design is outlined on the metal plate selected, and by means of variously formed hammers and punches is beaten out from behind, the figures of the subject being gradually brought into relief : the finishing of the details is worked upon the face ; the plate, if necessary, being filled in behind by a composition of wax, pitch, and other substances to form a resisting mass sustaining the *rilievo* : the stamp and chasing tools complete the finish. A more mechanical method is to beat the metal plate into a mould, formed of hard wood or harder metal, upon the

surface of which the design has been carefully incised in intaglio ; finishing afterwards by punching and chasing. Machine stamping into or with a die or "force" is largely used in the manufacture of light brass-fittings and ornaments ; the after colouring, lacquering, or burnishing of which scarcely form part of our subject. Coins and medals, when not cast, are stamped in the ordinary manner in a steel die.

The next care is to impart an even colour to the surface, for, when finished by any of the processes of working, by the hammer, the furnace, the roller, or the press, the object naturally retains the original garish colour of the metal. By exposure to the air a gradual chemical action takes place, and the surface assumes a natural patina or tint, varying with the nature of the alloy and the atmosphere to which it is exposed. But it has been more or less the practice from ancient times to give an artificial colouring to the metal by the application of various mixtures, known as pickles ; and by processes, some of which have been kept as precious secrets by their discoverers. We may describe some of those which are more generally known.

Small objects of copper, as medals, coins, &c., obtain their liver colour by the following means : the medal, after being strongly heated, is washed with spirits of turpentine, which becomes decomposed, leaving a film of resin of a reddish colour firmly and evenly attached to the surface of the piece. A more simple process for the medal struck, as is usually the case, from soft copper, is by heating and then rubbing the surface with the peroxide of iron or jeweller's rouge. Another and more lasting method, equally applicable to bronze medals, is by applying to them a solution consisting of muriate of ammonia (sal ammoniac) one part, subacetate of copper (verdigris), two parts, dissolved in vinegar by boiling and carefully skimmed. Diluted with water until no further precipitate falls, and again boiled, it is at once poured over the pieces so placed in a copper pan that every part is touched by the liquid. The action of the acid must be watched

that it does not go too far, and when the surface has assumed the required colour, the pieces are carefully washed to remove all acid, dried, and polished with a brush.

A Chinese process is said to be by means of a mixture of cinnabar, verdigris, alum, and sal ammoniac, with which the object is pasted over, then gradually and uniformly heated ; after cooling it is washed and polished. Nothing can exceed the beauty and variety of colour imparted by the Chinese and Japanese to their admirably cast and finished works in bronze.

Various modes have been proposed to imitate the natural *patina* which antique bronzes take after being long buried in the ground. The patina varies with the nature of the soil or because of objects in the immediate vicinity. Thus, marshy and peaty soils will give that low olive tone of colour and beautiful surface known as the Pontine and Maremma patinas ; and contact with iron will impart a rusty tint. In some cases the surface acquires the smoothness and brilliant colour of malachite, while every detail of the most minute workmanship is preserved. Volcanic soils act strongly on the metal, as does the nitrous soil of Egypt, and leave the surface rough, while in many instances it is blistered and distorted out of form. These states of the surface and of the metal beneath, arising from the slow and regular action of natural causes, vary considerably. In some examples, more frequently afforded by the dry climates of upper Egypt and Greece, the surface of some parts is left purely metallic and free from oxidation ; this is also the case with many bronzes which have been constantly beneath fresh water, as, for instance, weapons, &c., dredged up from the bed of the Thames and other streams, from peat bogs, &c. On the other hand many examples occur in which, notwithstanding the more or less perfect preservation of the form and details, the whole interior mass has been converted into a crystalline red oxide of the metal, hard and grating to the knife edge, and having on the external surface a thin film of carbonate, of close and even grain. Occasionally small portions

of the black oxide of copper may be found, but it seems to be the invariable rule that, where an antique bronze is covered with a green patina, a thin stratum of the crystalline red oxide may be traced between it and the metal.

It is difficult and almost impossible to imitate perfectly the natural patina of an antique bronze; and the eye of a practised connoisseur will not be satisfied with the presence or absence of patina alone, in his judgment of the authenticity of an object submitted to his scrutiny. There are characteristics which it would be hard to define, but which long experience will unveil to a man naturally gifted to appreciate the artistic spirit of works of various periods, and the nice distinctions which exist between the real object and an imitation. Occasionally an ancient work may be passed by, or even condemned as a reproduction, which has suffered from the over nicety of a possessor, or the excess of assiduity on the part of the cleaner and restorer, who sometimes have thought their own new colouring better than the old. The imitation of the antique patina has generally been kept secret by those who have practised it with the greatest success, for obvious reasons; the bronzes so coloured being for the most part forgeries of the antique.

One well-known method, the success of which greatly depends upon its skilful use, is to mix twelve parts of common salt with six of the bi-tartrate of potass and two of sal ammoniac, dissolving in twenty-four parts of boiling water, and adding thereto from eight to ten parts of the strong solution of nitrate of copper. This mixture is to be washed over the surface of the bronze, which must be kept in a damp place, frequently repeating the application as it slowly dries, and until a truly antique effect is produced, which is heightened by polishing. Another method is by covering the bronze with a mixture of sulphate of iron, vinegar, water, and sugar, in proportions varying with the judgment and experience of the operator.

For giving an even tone, without doing more than softening

the glitter of the new metallic surface, some bronzists have merely washed their work with a solution of the muriate of ammonia, leaving time to do the rest. A thin greenish varnish was used by others; an objectionable method; as was also that so frequently applied to bronzes of the sixteenth century, namely, an artificial glazing of dark brown, which, like the last, frequently scales off, leaving uncovered patches of the metal.

There are other methods also of imitation and of heightening the effect of a surface which had been rendered dull by damp or ill treatment. Thus the application of almond oil, in which flower of sulphur has been long macerated and exposed to the action of the sun, is useful in some cases: mercurial ointment in others: while the smoke of slowly-burning green willow twigs or laurel leaves, and that arising from old shoes, are valuable agents in experienced hands: and, to name no more, sal ammoniac for the antique patina.

CHAPTER III.

ON THE USE OF BRONZE IN PREHISTORIC TIMES.

THE use of the alloys of copper in the multifarious production of weapons, tools, domestic and culinary utensils, sacrificial and sepulchral vessels, armour, hinges, and locks, even roofing-tiles and wall-linings, personal ornaments, &c. &c., has been so extensive and continuous throughout the world's history that we can only offer a few and cursory remarks upon the development of its many appliances. Carefully to trace the use of bronze in its application to the various branches of the plastic art would be little less than a history of the progress of sculpture, a subject far too vast and too important to be here attempted. We must content ourselves therefore with a hasty glance at the employment of bronze by various races of mankind, from that remote period when the "bronze age" in different countries was overlapping on the one side the ruder age of stone, and on the other the gradual extension of the use of iron.

We know by observation and written record that subsequent to the period, varying in different countries, when the use of stone weapons and implements was general, the art of fashioning metals gradually spread. It is reasonable to presume that the native metallic copper found in various places was first brought into application, and that from the fact of that metal requiring a very high temperature to fuse, and the more complicated arrangements

necessary for casting, the earlier method of working it into shape was by cold hammering; this was subsequently assisted by previous heating. Accordingly we find that some of the tribes of North America, in the district of lake Superior (although able to rend the rocks by fire in order to extract the flakes of metal, and to sink shafts and workings where native copper occurs in large masses, but unacquainted with the art of fusing and casting) were in the habit of fashioning the metal thus found ready to their hands into various instruments by cutting and by cold hammering. In Ireland, India, Cyprus, &c., weapons of copper, cast or beaten, have been found of simple forms, analogous to those of the stone implements, the use of which preceded or was contemporaneous with them. Some of these, whether fashioned by the hammer or cast in moulds, have been proved to contain a small quantity of tin, which may or may not have been an accidental addition.

How the admixture of tin with copper to produce bronze was first discovered, and where, are problems which we can hardly expect to solve; but it is a remarkable fact that scarcely could our present scientific knowledge suggest an improvement in the general composition, or our advanced mechanical practice surpass the admirable workmanship and beautiful form of the various implements, of the developed "bronze period." Their more usual composition is of nine parts of copper to one of tin; but the proportion of the latter metal occasionally varies, as might be expected, from five to fifteen per cent., and in some of the later specimens some lead has been detected.

As far as our present knowledge will enable us to infer, it would appear probable that the Caucasus was the cradle of the bronze industry and civilisation: thence, as from a watershed, it flowed in one direction, southward and westward, through Greece and the Mediterranean islands to Italy; perhaps to Cyprus by Phœnicia: in another by the Danube, through Hungary and northern Germany to the Baltic, whence it may have spread to Sweden and Norway. At a very remote period bronze attained

to a high degree of perfection in Greece and in Etruria, probably anterior by several centuries to its spread in Germany. Gaul, and perhaps Britain, may have received it from the north, unless we may suppose that, as is equally probable, a native English development was prompted by the abundant possession of the requisite ores. Indeed it may not unreasonably be presumed that various sources of the art existed, springing from those districts where copper and tin ores were native, and differing in period proportionally with the development of their respective civilisation. The use of bronze for cutting instruments as preceding the knowledge of iron is referred to by Hesiod, by Lucretius, by Agatharchides, and other ancient writers, and proved by modern research.

In Egypt the use of iron was known in very early times, and iron instruments have been found, together with those of bronze, such as daggers, axes, swords, &c., of characteristic forms peculiar to that country. One of these, a flat axe blade of bronze, is inscribed with the name of Pa³hek-aa, supposed to be one of the shepherd kings. So also in Assyria, bronze occurs in company with implements and weapons of iron, the latter being more numerous ; and in Babylonia also.

Bronze weapons were often unearthed during the excavations made in Cyprus by general di Cesnola and Mr. Lang ; and it is remarkable that many of these were made of nearly pure copper, perhaps by hammering only, as the sockets are formed by beating round a central form. The bronze weapons discovered by Dr. Schliemann at Hissarlik, the supposed site of ancient Troy, are finely shaped by casting. Rhodes has yielded others at Talysus, assumed to be 1200 years B.C. In the Caucasian plains a large quantity of bronze arrow-heads of Grecian type has been discovered. The copper implements of India have already been referred to ; of these the great hoard of 424 pieces discovered in 1870 near Gungeria, in the Balaghat district of central India, is, perhaps, the most noteworthy. Some few others of bronze have been found elsewhere in India, and also in Persia, in Birmah, in

Java, and in China. Siberia has a few, and perhaps every country of Europe has given us specimens in more or less abundance ; Greece and Italy, France and Switzerland, Germany, Hungary, and Sweden, having their more or less peculiar and characteristic examples of nearly every variety of cutting or pointed instrument, weapons, tools, and personal ornaments. Implements of copper have also been found in Peru.

The idea, so long prevalent, that Phœnicia was the source from which nearly all the earlier bronze implements and utensils were derived has been completely refuted by more recent research ; the Etruscans having as strong a claim to that distinction. Moreover, as we before observed, there can be little doubt that every country had its own native industry, for each great district yields objects of more or less characteristic form, together with the moulds, the rough metal, and other proofs of home fabrication. It is also to be remembered that Asia minor, Phœnicia, and Africa, have as yet furnished very few bronze weapons. Two copper celts were found near Bethlehem ; and some arrow-heads are in the writer's possession, found at Sidon ; these last are probably of Greek origin.

In no country, however, was the production of bronze weapons and implements brought to greater perfection than in our own ; and we may perhaps even go farther in saying that, both in respect to the beauty of the lines and form, the constructive excellence, and the perfection of the casting, these productions of the early inhabitants of Britain would rival, as far as their limited requirements directed, the manipulative skill of the best workmen of Sheffield or Birmingham at the present day. This is true, not merely in regard to casting, but equally to the excellence of the toreutic workmanship of shields, brooches, and other objects, of the later Celtic period, sometimes enriched with enamel. Further, we must bear in mind that these were the productions, for the most part, of a people anterior to or independent of the Roman civilisation, that "compulsory education" which,

changing the current direction of all native industries, more or less moulded their arts into one great systematic style, and left its impressions in proportion to the period of the conquerors' sway.

Let us now inquire into the means by which such excellent results were produced. Fortunately modern research has enabled us not only to learn the nature of the finished objects themselves, but we have discovered the tools, the materials, and other evidence, from which we may learn the whole *modus operandi* of the ancient British armourer's workshop, and mentally figure to ourselves the cunning but unlettered artist, handling the very tools which his care had hoarded in a supposed place of security.

At a most instructive exhibition (in the rooms of the Society of Antiquaries, in 1873) of bronze implements and weapons, Mr. John Evans, the learned authority on prehistoric subjects, showed and explained the nature and use of a number of objects, found together on the island of Harty, Kent, in one hoard, evidently the worldly wealth of an ancient bronze-founder. There are the pieces of rough copper and fragments of broken weapons, ready for fusing; the bronze moulds for socket celts, and some of the sockets which had been cast in them; the bronze mould for a gouge, and two of those implements; the quadrangular hammer; pickers, one broken, probably in its use for dislodging the cores from celts; knife-blades, &c., and a whetstone. From another hoard found at Burwell, in Cambridgeshire (in addition to fragments for melting and the celts, spear-heads, knife-blades, and gouges, already formed) were two awls and a socket hammer.

I must borrow largely from Mr. Evans' description of the method pursued in casting, &c. by the ancient founder, if not his very words. Of the nature of the primitive furnace we have no knowledge, nor of the vessels in which the metal was fused. Three methods of casting were employed: moulding in clay or sand, probably the most primitive; casting in stone moulds; and in metal moulds. Perhaps also the use of wax models for the more complicated forms was adopted, or, what is more probable, models formed of soft wood and burnt out of the

mould. Among the objects found at Harty, is the mould for a socketed celt, in two parts which fit together with dowels ; a celt certainly cast from this mould is there, but on trying it in, the cutting edge is found to be too broad and too long ; and why ? It is clear on examination that the edge has been hammered to sharpen and to harden it, and thus has been extended beyond the outline of its original form. The bronze hammer is there as a witness to the fact, and is made of a harder alloy than that of the celt ; and there also is the whetstone, "used by this old founder for giving a final polish to the edge of the celts." The core for the socketed celt, formed of clay, was baked to hardness in the fluid bronze ; among these instruments is a pointed tool, doubtless the pick for working out this indurated core. Again, we find in another hoard evidences of the use of lead ; it may be for "core boxes" and leaden celts, or perhaps patterns from which clay and sand moulds were formed.

We dare hardly venture upon the consideration of the chronology of the bronze period ; it must have varied in its development from various centres. Lindenschmidt thinks that the bronze age in Europe generally goes back to the time of the Etruscans, but this is in-



ENAMELLED VASE FROM BARTLOW HILLS.
(Since, partially destroyed by fire.)

definite. Mr. Evans considers that the bronze period in England extended over several centuries, and that it had virtually merged into that of iron, at least a century before the invasion by Cæsar. A transitional period is to be noticed, defined by Mr. Franks as the "late Celtic," during which the inhabitants of Britain produced admirably finished weapons, shields, and personal ornaments of bronze: some of these are ornamented with enamel; a method also in use among the Romans, but whence it was derived yet seems doubtful. The execution of the hammered work in relief upon some of these objects could hardly be surpassed in excellence. Bronze vessels rarely occur in England.

In Egypt, where a highly-advanced civilisation existed when Abraham was a sojourner in that land, nearly twenty centuries before our era, we find the use of bronze for tools and weapons, as well as for other purposes, to have been general. Thus we have daggers, axes, and other implements of the time of Thotmes III., and earlier. A curious tool, apparently of pure copper, was found in recently explored passages in the great pyramid. A razor in the British museum, a thin wide blade, beautifully formed and probably hardened by beating, shows signs of having been sharpened on the whetstone. It is therefore vain to inquire to what remote period in that country the mode of reduction from the ores, the knowledge of the alloys with tin, &c., and the art of casting objects in a mould could have extended.

It is probable that the Etruscans were adepts in the working of bronze at an earlier period than the Greeks: and it is worthy of remark that, whereas the Grecian weapons seem, until a later period, to have been formed of bronze, iron weapons are associated in Etruscan tombs, believed to be of earlier times, with the shields, breastplates, and other defensive armour made of bronze. The smaller works of the Etruscans, Greeks, and Romans, as also of the previous inhabitants of Italy and the Mediterranean countries, are for the most part, or always, cast solid. This

practice also prevailed during the earlier half of the *renaissance* period.

It is indeed probable that the earliest mode of forming smaller figures in the round (*epithema*), the primitive statuary, was by casting solid in a mould. This would seem to have been the case in Egypt and Assyria, as well as in Etruria, Phoenicia, and in Greece. In the latter country and in Etruria figures of a larger size, as well as vessels, were formed of beaten plates pinned or riveted together, and generally upon a wooden or other core. These were the works known as *holosphyrelata* and *sphyrelata*. The method of forming in *rilievo* by embossing or beating up in a mould and finishing with the punch and chaser, work known as *emblemata*, is also of a like antiquity. Both processes were well known to the Egyptians; an example of beaten work is a small figure of Osiris in the British museum.

Hollow casts, in which the solid interior was supplanted by an earthy core, a method by which great lightness and economy of metal were secured, were made by the Egyptians, even in figures of a smaller size. An example in the writer's collection is still filled with a black core, very light, which seems to be composed of sand with powdered charcoal and probably some agglutinating substance; but it is of a later period than the sixth century before Christ.

To Glaucus of Chios was ascribed the art of soldering the various pieces together, thus obviating the necessity for rivets. Mythical statements of this kind must however be received with full allowance for poetical sentiment, and the desire to attach discovery or improvement to individual names. They can, moreover, only refer to the use of bronze in the sculptor's studio; the bronze weapons of prehistoric times having been known to the classic writers, and collected and highly prized as curiosities by some of the Roman emperors.

CHAPTER IV.

ON THE USE OF BRONZE IN SCULPTURE, ETC., BY THE NATIONS OF ANTIQUITY.

IN the last chapter we have thrown a hasty and somewhat general glance upon the early modes of fabrication of bronze and copper, and the uses to which they were applied in prehistoric ages. The objects of necessity must naturally have been implements for the chase, weapons for defence, and tools. Ornaments for personal adornment were only secondary, but soon the desire to imitate the forms of surrounding natural objects, and to create and embody types of a religious sentiment, inspired by the common observation of natural phenomena, led to the production of rough figures in terra-cotta, wood, and other simple materials, which were followed by similar works in bronze.

At what precise period those curious rude figures which have been found in various parts of the Italian central and southern hill country may have been made, and under what circumstances of civilisation, is more than antiquarian knowledge can, as yet, define; nor do we feel called upon in a work of this nature to do more than allude to that abstruse subject of high antiquity, which has occupied the thoughts and pens of many antiquaries. But, although it may be reasonable to conclude that smaller objects, such as those just referred to, were for the most part, even in the earlier ages of civilisation, formed by fusion and casting in the

mould, the desire to make works of larger size or more intricate form was beyond the means at their disposal; nor were the primitive artists sufficiently cunning to devise mechanical methods for the production of a more complex cast. We find accordingly, in the Greek and Mediterranean islands and mainland, and particularly in Etruria and other provinces of Italy, existing examples, which show that those simple tools, the hammer and the tongs, were called into service to produce beaten metal-work in copper and its alloys: plates were hammered and adjusted in the form of the different limbs of the required figure, then finished by chasing or punching, and fixed or riveted to each other, or fastened by pinning upon a wooden shape. The early tombs of Vulci, Perugia, and Cervetri have afforded notable examples of such *sphyrelata* or hammered work; particularly the singular archaic female bust, with long ringlets and a base ornamented with figures in *rilievo* of sphinxes, chariots, &c., which is now preserved in the British museum.

On this invaluable monument of early toreutic art (which was discovered in the grotta d'Iside, at Vulci, together with Egyptian objects of pottery, &c.) no soldering is to be seen; the plates are held by pins upon the wooden core; the corkscrew ringlets are formed of coils of the thin metal cut previously into ribbons, and attached by a nail above; the timidly defined features and members are produced by hammering the metal from within, as are the bas-reliefs of curious animals, perhaps beaten into a corresponding intaglio previously incised in stone or wood; and the junction of the various plates is cunningly concealed by overlying ornament.

Here we should pause to consider the circumstances under which these works were produced, and the influences which led to their adoption and development. First, we must recollect that the metals were difficult of production and valuable accordingly; economy in its use was therefore necessary, and it was important for the artist to produce the largest possible effect with the

smallest quantity of material. We have said that the art of fashioning metal by means of beating with the hammer was probably of earlier date than that of casting, and this would seem to have been the case with the ancient inhabitants of Ireland, India, and elsewhere, who first began the use of metal weapons formed of beaten copper. For the formation of vessels, in which lightness was an almost indispensable quality, such a process would naturally be adopted: and thence by successive stages of improvement the art of the coppersmith rose on the one hand to the dignity of sculpture, and on the other to the production of vessels and articles, more or less ornamented, for domestic, sacerdotal, and funeral uses. This course of improvement in one direction was natural and sequent, maintaining its independence of the sister art, that of the founder, which in a parallel course struggled through the greater difficulties retarding its earlier life until an equal perfection was attained. Schooled by practice and working hand in hand, they united to produce during the palmy days of Egypt, Greece, Etruria, and Rome, those unsurpassed works of bronze in every form, from the most delicately fashioned personal ornament to the heroic statue, of which we have so few memorials still left to us.

By these, however, we are enabled to trace the progress of the art: the hammered plates, nailed or riveted together; their mode of attachment developed into a constructive ornamental *motif*—the native root from which all healthy ornamentation should take its rise; then united by soldering and accentuated by mouldings covering the joint and declaring the stages of construction; again, later, by the union of the kindred arts, the hammer-formed body of the vase with the handles and more solid ornaments cast and soldered or riveted on. Both branches of the art must also have combined to fit the warrior chief for the battle-field: his spear and arrow-heads and the blade of his sword were moulded from the furnace; while his shield, his helm, and armour were more frequently beaten into form and finished by the chasing-tool and punch.

And still these parallel methods of fashioning copper and its various alloys to the requirements of the highest and the most ordinary of human purposes, have continued to work together in steady development from those dawning days of civilisation and infantile but earnest striving with the difficulties of metal work, down to this our age of scientific and manufacturing power and industry. Especially, we must not lose sight of the dexterous handiwork requisite to produce the results bequeathed to us from those early times. The skilful manipulation necessary to fashion from the lump such even and thin plates of bronze by the action of the hand hammer only, would put to the blush many a modern workman proud of the facility with which he can apply the improved mechanism of his tools.

But in the one case, as in all pure handicraft, the mind is excited and led on in striving to attain a dexterity which the hand and head and not the tool can furnish ; and the hammer, like a painter's pencil, becomes a means of communicating mind to matter, recording the painstaking assiduity and artistic skill and sentiment of him who wielded it. The perfection of modern machinery acts in the contrary direction. The almost self-acting tool conveys its material and mechanical quality to the human machine who starts it into motion and assists its labour merely by the tightening of a screw or the withdrawal of a pin : the result is the production of the machine, rather than of the man who tends it. Art and handicraft are man and wife ; mechanism and manufacture (so miscalled) are also wedded, and a fertile pair, but they are of a younger and less noble branch of a grand old family. Nevertheless they are suitably adapted to our age : but it behoves us, in their encouragement, never to forget the more inspired works and higher artistic claims of the older family, nor to check our admiration and encouragement of those among its members who will, for the love of what they do, individually devote themselves to any one branch of artistic handicraft.

We will now attempt, but still only in a superficial manner, to

follow up the investigation of the use of bronze by the sculptors of Etruria, of Greece, and of Rome, during the periods of their several histories, before entering upon the consideration of its employment in mediæval and more recent times.

Egypt, Assyria, etc.

The antiquity of civilisation in Egypt is one of those archæological problems which will long remain to be solved, although light is steadily gaining upon the subject, and the well-directed researches now being made will gradually dissipate much of the darkness in which its earlier history is yet obscured. So also with Assyria: for who can now say to what remote period a high degree of development in the industrial arts may not have existed among the inhabitants of the cities and towns watered by the Euphrates? —a development which, judging from what we already know of its remains, appears to reduce much of Hebrew chronicle to a comparatively recent time.

As far back as we can trace, the use of bronze seems to have been abundant, and its fabrication both by casting and beating perfectly mastered.

We learn by the inscription of Una, of the period of the sixth dynasty in Egypt, how he brought “the sarcophagus with its cover and pyramidion,” and “a granite doorway, with sill, granite doors, and lintels” to the Shanefer pyramid; from which we may infer that the bronze tools requisite for the working of these objects were in familiar use. Some centuries afterwards we find in the annals of Thothmes III. (eighteenth dynasty, *circa* 1800—2000 B.C.) a record of vases of bronze, as well as works in gold, silver and iron, and tent-poles ornamented with bronze. Bricks (probably ingots) of copper from the “wretched Kush;” brass armour and other metal-work from them and the other peoples whom he had conquered. Again, in the narrative of the battle of Megiddo, gained by Thothmes III. over the confederate kings of Palestine,

mention is made of the chariots plated with silver and gold captured from the enemy ; suits of brass armour, some inlaid with gold, one from the chief of Maketa ; vessels of brass (or bronze) ; arms and weapons of the same metal from various tribes. Such records prove the extensive and varied use of all these metals, iron included, by people whose civilisation was far below that of their conquerors ; and, further, that from its abundant use in so many ways the knowledge of bronze must have existed for previous untold ages.

The series of weights, in bronze, formed as lions, the heavy fetters, and the bowls of bronze ornamented with figure and other subjects in beaten work, which are preserved in the British museum, prove the familiarity of the Assyrians with all the *technique* of bronze handicraft. That museum is rich also in specimens of cast and beaten bronze of Egyptian manufacture, to some examples of which we have already referred. It is, however, to be borne in mind that up to the present time we have no evidence of the power to produce works of colossal or even of large size by casting, either in Assyria or in Egypt. But in the seventh chapter of the first book of Kings we read how Solomon fetched Hiram out of Tyre, a worker in brass, who executed extensive and varied artistic works for the temple, among them the "molten sea, ten cubits from one brim to the other ;" and how they were cast "in the clay ground between Succoth and Zarthan."

Etruria.

There can be little doubt that the arts of the Etruscans were to a certain, although perhaps limited, extent influenced by communication with Egypt and the east, directly or through the intercourse of the Phoenicians ; at the same time it must be borne in mind that the Pelasgian and Tyrrhenian elements were strongly imbued with an archaic orientalism. But, beyond and inde-

pendent of all this, Etruscan art has a marked individuality of character ; and it is more than probable that the knowledge of ordinary and artistic metal work, particularly in gold and bronze, was, with other arts indicative of a widely-spread civilisation, possessed by that remarkable people at a very remote period. It would seem also that at a time when Greek art was escaping from the rigid formula of the archaic style, the more traditional manner of the Etruscans, probably controlled by priestly influence, led them to keep to the earlier forms until a much later age. We find accordingly that in the contemporary works of the two peoples, those of the Etruscan would frequently seem to be of an anterior date. The progress of Hellenic influence, communicated through the Grecian colonies of southern Italy, was irresistible ; and the later works of the Etruscans, though still generally retaining a certain rigid mannerism and individual character, were hardly to be distinguished from some of the less advanced productions of the Grecian schools.

History fails us in respect to the oldest works of the Etruscans, as we have yet to learn their exact origin and their language. Their knowledge and great excellence in bronze casting was indubitably a possession of an ancient time ; but, while day by day the books of Egyptian and Assyrian history become more and more revealed to our research, little progress has yet been made in tracing that of Etruria. We have already alluded to some important examples of their toreutic workmanship yielded to us by her tombs, for from their contents, almost exclusively, do we learn what little we know of their minor arts and the habits of their lives. These contents frequently offer parallel proof of the uses to which bronze was applied as described in the writings of Hesiod and Homer. Thus we find in the Perugian grottoes the beaten plates covered with figure subjects which once adorned a chariot, and some objects of furniture. The walls of tombs, as at Fonterotella, seem sometimes, from fragments of their metal which remained, to have been partly or in whole covered with

an ornamental metallic lining. A tomb recently opened at Chiusi had the floor paved with strips of bronze fastened together by nails over crossed iron rods. These discoveries recall the description of the treasury of Atreus at Mycenæ, and declare that the blind bard was not in poetic flight dreaming merely of what he had never known.

The abundant use of bronze for cast and beaten work by the Etruscans is very remarkable : and, although few of their larger works remain to us, the museums of Europe display a marvellous variety of votive statuettes, lamps, vessels, and instruments, furniture and armour, admirably formed, and in some instances inlaid with silver and gold in a manner which proves their equal skill with the Greeks in this mode of enrichment. Yet, notwithstanding the great excellence in point of skilful casting, beating, or inlaying, and the high finish bestowed by the Etruscans on their works in bronze, they never advanced in the higher walks of sculpture to within a long distance of that glorious perfection attained among the Greeks, by artists like Polycleitus or Lysippus.

Etruscan cities, no less than those of Greece, were crowded with statues of the gods and heroes ; and Rome in her aggrandisement by conquest derived her best adornment from the pillage first of Etruria and then of Greece. Some idea of the number of statues in the cities of Etruria may be gathered from the statement that at the capture of Volsinii by the Romans (B.C. 280), at least two thousand, some of which were of colossal size, were carried away to Rome ; but whether all of bronze may be questioned.

Although we do not here pretend to inquire into or attempt to distinguish the bronze works of the other peoples of Italy, which, perhaps less developed than by the Etruscans, were ably and abundantly produced by the Pelasgians and Tyrrhenians, the Samnites, the Volscians, and probably by the Sabines and other races, we must not lose sight of the fact that many such existed. Pliny informs us that the great bronze statue of Apollo on the

Palatine, taken from the Samnites, was so large that when set up in Rome it was visible from the Alban hills. One of the most ancient of bronze statues was that of Jupiter, which stood near the temple of Minerva at Sparta. This was formed of beaten plates fastened together by nails, and was said to be the work of Clearchus of Rhegium, in the south of Italy ; but whether he was a Pelasgian or a Greek we do not know.

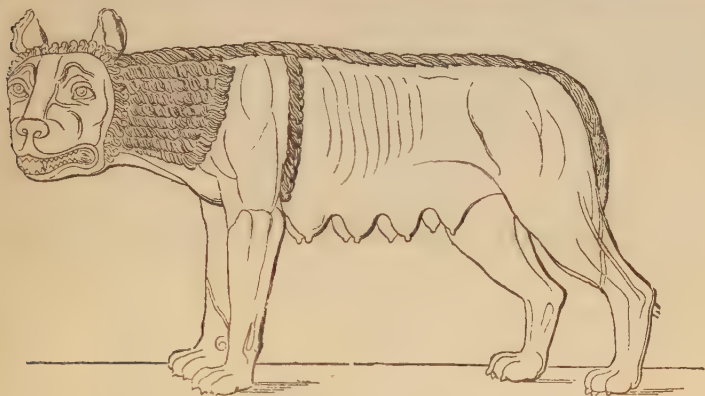
Among the few Etruscan bronzes of larger size which have been preserved, admirable in point of execution though partaking of the archaic and oriental character, is the remarkable figure of the Chimæra, inscribed in Etruscan characters TINS CVIL, now in the museum of the Uffizii at Florence. It was found at Arezzo



BRONZE CHIMÆRA AT FLORENCE.

in 1534. The Minerva, also found at Arezzo, is another and still earlier work in the same museum. The well-known bronze wolf of the Capitol, also an archaic work (although by some supposed to be a production of the middle ages), is ascribed to Etruscan artists, and presumed to be that votive figure erected in the year 295 B.C., at a time when Grecian sculpture was far advanced beyond its period of greatest excellence. A cast of this wolf in

scagliola is in the South Kensington museum. An inscribed



BRONZE WOLF OF THE CAPITOL.

figure of a boy holding a goose is now in the Leyden museum ; the lettering is executed in silver on the right leg and thigh. A larger and more advanced work (probably of the period of Roman rule in Etruria but before her language had fallen into disuse) is the life-sized statue of the orator Aulus Metellus, found on the shores of Thrasymentum, in 1573, and now in the Florentine museum.

The Etruscans were noted for their skill in the production of various articles of furniture and ornamental work in cast and beaten bronze. Their candelabra and lamps, which were exported from Etruria and are referred to by Athenæus and others, are particularly graceful. Fine examples are preserved in the Gregorian museum and at Florence, and, at home, in the British museum. The lamp found in the neighbourhood of Cortona and now in the museum of that ancient city is a wonderful specimen. Specially remarkable are the hand mirrors, or *specchi*, which were cast ; one side being polished sufficiently to reflect objects, the other having subjects generally engraved upon the sunken surface, and more rarely in *rilievo*. Many of these are works of great beauty. Some were contained in cases on which *rilievo* subjects

were produced by beating from within. The British museum is rich in mirrors, Greek and Etruscan.

The art of "damascening," or inlaying gold and silver beaten into incised hollows on the bronze surface, was well known and practised by the Etruscans, as by the Greeks and Romans. This mode of enrichment was followed by the use of enamel in later Celtic and Roman times, and by niello. The value of coloured stones, ivory, and enamel, to give life to the eye, was also generally known. A statuette in the British museum has, literally, diamond eyes.

Greece.

We have already alluded to the working of bronze by the ancient Greeks as described by Homer and Hesiod, referring particularly to the shield of Achilles and the shield of Hercules. The description of the gorgeous palaces of Menelaüs and of Alcinous in the *Odyssey* would show, even allowing for poetical licence, to what an extent the use of this metal had been adopted, and how frequently plates of brass, or more correctly bronze, were applied for the decoration of walls, furniture, &c.

The walls were massy brass : the cornice high
Blue metals crown'd, in colours of the sky ;
Rich plates of gold the folding-doors incase ;
The pillars silver on a brazen base.

Pope's *Odyssey*, b. vii.

There can be little doubt that the larger figures, as of animals, &c., were not then fashioned by casting but were *empæstic* works, or *sphyrelata*, covered with beaten plates of the metal. The colossal bronze Apollo at Amyclæ in the neighbourhood of Sparta was, according to Pausanias, little more than a pillar, with indication of head and hands which held the weapons. We may conjecture that in the earlier years of the seventh century B.C. Glaucus of Chios made great advance in metal work, by solder-

ing, &c.; while the Samian artists Rhæcus and his sons, Telecles and Theodorus, invented or, what is more probable, applied the art of casting to larger works by improved methods; perhaps their own discovery, perhaps learned by them from Egyptian artists.

About 550 B.C. the Cretans Dipænus and Scyllis also worked in the Peloponnesus and in Ætolia, producing various sculptures in wood, ivory, and gold, and gilded bronze statues of Diana, Apollo, and Hercules, &c.; their followers meanwhile establishing a school of sculpture in Sparta. Among others were Clearchus (or Learchus) of Rhegium, in southern Italy; Aristocles of Sicyon; Ageladas, Aristomedon, Dionysius of Argos. In Ægina Callon maintained the older and severer manner, similar in its rigid and minute style to that of the artists of Etruria. His bronze statue of Proserpine was celebrated. But he was surpassed by Onatus of the same island, who executed groups and statues, notably a chariot with four horses, dedicated by Hiero of Syracuse to Olympia, and placed there in 466 B.C. He is supposed by Overbeck and others to have been the sculptor who executed the Æginetan marble groups, now preserved in the Glyptothek at Munich, about 475 B.C. At Athens Critias and Hegesias were sculptors in bronze.

We have now arrived at a period approaching that of the highest perfection of Grecian sculptures. Myron, the Bœotian, who was one of the most distinguished among the pupils of Ageladas, worked like his master for the most part in bronze, and is said to have preferred the Æginetan alloy. Celebrated was his group of Jupiter with Minerva and Hercules, at Samos, which Antony carried to Rome: Augustus, however, having restored the other statues to the Samian temple of Juno, detached the Jupiter and placed it in a shrine on the Capitol. His Erechtheus at Athens and a Bacchus were also famous; an Apollo at Ephesus; another inscribed with the sculptor's name at Agrigentum, and a Perseus conquering Medusa. Pliny tells us that a Hercules by Myron was in the house of Pompeius in Rome. A group of

Minerva and Marsyas, of which latter figure there is an antique copy in marble in the Lateran museum, is among the most renowned of his works in bronze which are recorded by the ancient writers: to this we must add the world-celebrated cow. His manner was energetic and masculine, and his subjects for the most part in spirited and vigorous action rather than expressive of mental or bodily repose. The figure of the discobolus, described by Lucian and well known to us by the antique marble reproductions in the Vatican, the palazzo Massimi, and elsewhere, is a characteristic example of his style; as was the statue of the celebrated victor at the Olympic games, Ladas the runner.

To Cresilas, a follower of the school of Myron, has been ascribed the statue of a wounded amazon in bronze, of which some antique copies in marble are still extant; the finest, perhaps, that in the Capitoline museum at Rome. He also executed a bronze of a wounded warrior in the last throes of his waning life. He made a portrait bust of Pericles, of which those in marble in the British museum, the Vatican, and at Munich may possibly be copies.

Callimachus and Demetrius, artists of the same period, though somewhat influenced by their greater rivals, pursued to a certain extent an independent manner. To Callimachus has been ascribed the invention of the Corinthian capital in architecture, the minute beauty of which would suggest an original of metal. The adaptation of the graceful leaf of the acanthus to architectural decoration might well suggest itself to a mind constituted like that of Callimachus; as evidenced by the established character of his works, namely, high elaboration of details. Demetrius, naturalistic and minute in his execution, was much occupied in portraiture, in which he was thought to be over exact, even perpetuating small defects.

The zenith of Grecian art was comprised within the short space of a quarter of a century, from about 460—430 B.C., when Athens was for the most part under the control of Pericles.

Pheidias, born about B.C. 500, was probably the greatest sculptor of any age. It would appear that he first began his artistic career as a painter, but subsequently repaired to the school of Ageladas. Unlike Myron, his works are imbued with the highest intellectual sentiments and he executed them in various materials. Some of his earlier productions, as might be anticipated from his schooling in the studio of the bronzist Ageladas, were of that material. Thus we hear of his group of thirteen bronze statues presented by Athens to Delphi, in memory of the victory at Marathon: it represented Miltiades surrounded by the Attic heroes, and supported by Apollo and Minerva. He also cast colossal and other figures of Minerva; particularly that made from the bronze spoils of Marathon, which, some seventy feet in height, rose crowning the summit of the Acropolis and became a typical representation of the goddess.

Of the wonderful excellence to which sculpture had been brought in every variety of material, in its largest conception and in its most minute detail, some small idea may be formed from the fact that the celebrated "Venus of Milo" (now in the Louvre), perhaps one of the grandest impersonations that has been preserved to us, is considered by some connoisseurs to be only a carefully executed copy. More probably, however, it is really an original work of that time although not celebrated in antiquity. To this period may possibly also be assigned the beautiful bronze head of Aphrodite, found in Thessaly, now in the British museum; an original work of the highest excellence.

The influence of so great a mind as that of Pheidias spread far and wide, more or less modifying the schools of sculpture existing in the other states of Greece, the Archipelago, and her colonies, winning them by the magic charm of his artistic power to acknowledge the superiority of the Attic school. In the Peloponnesus Polycleitus, the fellow-pupil of Pheidias, had established an important school at Argos. In this what may be deemed a naturalistic tendency prevailed. As we know that

history repeats itself in art as in politics and war, so here also we find the prototypes of those two great divisions under which the artists of the Italian *renaissance* may also be classed. But we are told of the art of Polycleitus that, although the ideal was rendered by him subservient to natural beauty, nature herself was almost surpassed by the exquisite physical creations of his chisel. His colossal statue of Hera, a toreutic work erected at Argos, was important for size and excellence. Another, the statue of a beautiful youth, must have been the perfection of nascent manhood. We can hardly judge of the merits of this bronze from the antique marble, supposed to be a copy, which is now preserved in the British museum. In the Braccio nuovo of the Vatican is a figure of an amazon, also believed to be an antique copy after a work by this great master. We cannot here specify other lost works recorded as the productions of his skilful hand, which delighted in the most minute and careful execution of every detail. He is said to have been the first sculptor who dared to adopt the system of throwing the whole weight of a figure upon one foot, leaving the other free or even detached from the base: a conception whereby a great effect of lightness and elasticity was obtained, but which could only have emanated from an artist habitually working in metal rather than in marble.

It was about this time when the female form was represented in perfect nudity more frequently than had been the custom of a former age; we know that Pheidias had modelled Venus as nude, in the Pantheon, but this was an exception rather than the rule. Such was the crouching figure of Venus by Dædalus which, according to Pliny, was in the portico of Octavia. The well-known marble figures in Florence, in the Vatican, and elsewhere, are looked upon as ancient copies of this work. Meanwhile in Athens Cephisodotus (the elder), supposed to be the father of Praxiteles, was carrying out a style which, while partaking largely of the purely ideal sentiment of the school of Pheidias, had yet a tendency rather towards a more realistic

treatment. He also worked in bronze, producing statues of the gods ; of which one, a Minerva at the Peiræus, is referred to by Pliny in terms of praise, as also an altar in the temple of Jupiter Soter.

From the heart-stirrings and universal commotion of the Peloponnesian war sculpture received another inspiration, that of mental emotion and unrest, as contrasted with the sublime repose and dignity of the earlier Attic school. Greece was fatally divided against herself, and individual aggrandisement prevailed over self-sacrifice for the public good. Art became personal to states or individuals rather than the expression of a national devotion and of a high religious sentiment. Wealth and luxury had increased, and with them came a loosening of the Spartan spirit of a more primitive age. The commencement of a sensational and subjective epoch had been reached, and softer forms of female beauty were contrasted with a somewhat excessive and passionate emotion or of a dreamy and affected repose in the male, as also indeed in many of the female figures.

Scopas, Timotheus, and Leochares were leading artists of this time. Praxiteles was another great citizen of Athens, where he was born about 390 or 392 B.C. He is said to have worked by preference in marble as a more favourable material for the display of his unrivalled power of representing female and youthful beauty. In this he attained to the highest excellence in his nude statue of Venus at Cnidus, which called forth the rapturous admiration of the classic world, and was copied on the Cnidian coins. He, nevertheless, occasionally made use of bronze, but of some fifty works spoken of as by him the greater number are in the lighter material. The original of the well-known faun of Praxiteles was probably of bronze.

Cephisodotus and Timarchus, sons of the great master, also worked in bronze. To this period and school may probably be assigned the elegant figure of a youth listening, so well known as one of the choicest bronzes which Pompeii has afforded (in 1865),



BRONZE FIGURE OF VENUS.
(Fortnum Collection.)

and which graces the Neapolitan museum. A bronze figure of Venus, some thirteen inches high, which was found in the vicinity of Stratoniceia in Caria, and is now in the writer's possession, was considered by the late professor Westmacott and others to be a work of the school of Praxiteles. Silanion executed portraits in



MERCURY RESTING.

this material, as did also Euphranor, the painter and sculptor, a man of universal artistic genius.

Among the Peloponnesian artists at the same time Lysippus must first be named, who from his youth was accustomed to work in bronze, a material which he constantly employed. He soon

obtained not only the patronage of Alexander but the exclusive privilege of portraying him in sculpture. His works were very numerous, nor need we specify more than a few of the more remarkable: the colossal Jupiter at Tarentum, said to have been sixty feet in height; a group of Apollo and Mercury disputing for the lyre; and the Helios in his chariot at Rhodes, the effect of which Nero subsequently impaired by gilding, which had to be removed. The fine marble in the Vatican of an athlete using the strigil upon the extended right arm would seem to be an ancient copy from the bronze original, ascribed to Lysippus, which formerly was placed in front of the Thermæ of Agrippa at Rome. The seated bronze Mercury at Naples (p. 51), found at Herculaneum, is of his period and school, and possibly from the hand of the master himself. Pliny tells us that Lysippus produced not less than fifteen hundred statues by his own hand; a number, even including statuettes, which would seem to be incredible.

Lysistratus, Lysippus' brother, is said to have first adopted the ill-conceived method of taking casts from the living model and executing these in bronze. By some writers an iconic head in the British museum, the details of which are finished with great accuracy (No. 12, case E, bronze room), is supposed to be by this artist.

Chares of Lindus was a follower of Lysippus, and was the author of the world-wide celebrated colossus of Rhodes, an island particularly devoted to the worship of the sun. That huge creation, one of the seven wonders of the world, was of bronze, and represented the god Helios or Sol; it stood 105 feet in height and was completed in the year 291 B.C. It spanned the entrance of the port, ships sailing beneath the outstretched legs. Pliny states that few could span the thumbs with their arms, and that each of the fingers was larger than many statues. A winding internal stair led to the top, whence the shores of Syria and ships on the coast of Egypt could be seen. Overthrown by an

earthquake, 224 B.C., it lay in ruins until Rhodes was taken by the Saracens in A.D. 672, when the fragments, 720,900 lb. in weight of bronze, were sold, and are said to have required nine hundred camels for their transport.

The well-known bronze figure in the Capitoline museum, a seated youth extracting a thorn from the left foot, is probably a work or the copy of an original of this age (about 290–285 B.C.). The fine bronze of a drunken faun in the museum at Naples may be another example, and the grand head of Homer in the same collection.

The period of the highest development of Grecian sculpture may be said to have passed away with the death of Alexander. Then, although it still existed in a condition of excellence which



has known no subsequent equal, the summit of its glory had been reached, and the easy downward path encouraged the already growing tendency to a subjective treatment and laxity of purpose, accompanied by somewhat of exaggeration in the action and voluptuous rendering of the female figure. A sense of sufficiency in the artist, almost of a boastful display of energy, becomes apparent and the simplicity of the earlier art is lost. The purely Hellenic civilisation had degenerated, and its nervous tension

unstrung by the growing influence of eastern luxury and despotism. Nevertheless, there was a vitality in Grecian art which did not succumb without a struggle against the inevitable contagion of decay. The heart and trunk were almost dead, but some of the limbs yet retained vigour: and it was this fading and spasmodic power that produced works which were the despair of Michel Angelo, who dared not venture to restore more than a few lost extremities. Some of the works most highly esteemed by the artists and connoisseurs of the *renaissance* and of our own time were produced at this period. The Rhodian arm exhibited the strongest vitality; the spirit of Lysippus still floated in the sunlit atmosphere which bathed the hundred colossi of that island. Enormous wealth drew to her foreign artists from many other schools, while it gave full employment to her own in the gorgeous decoration of stately public and private buildings. The name of Aristonidas is given to him who executed a portrait statue of the repentant Athamas in bronze, to which iron was said to have been added to express the glow of shame in the colour, a statement probably more poetical than correct. The mixture of some salt of iron may, however, have been used by the artist in colouring the surface of the bronze with a view to this effect. The superb marble group of the Laocoon, the admiration of Pliny and the glory of the Vatican collection, is one only of the many original works produced at this period and at Rhodes. The Farnese bull is another grand work which has been ascribed to the same time and school, as also probably the group of the wrestlers in the tribune of the Uffizii at Florence. We can refer to no typical works in bronze of this school. Among the leading artists were Agesander, Athenodorus, and Polydorus, the authors of the Laocoon; Apollonius and Tauriscus, who sculptured the Farnese bull. At Pergamus another school existed in which the conquests of Attalus and Eumenes against the Gallic tribes which had invaded Greece about 280 B.C. were recorded, in gratitude to the gods, by large groups figurative of the battles of gods and giants; and by the representation of figures

of their northern enemies, for the most part in the same tragic and effective sensational manner as the works of the Rhodian sculptors. A tendency to represent historical subjects and dramatic action became manifest. We are fortunate in possessing one great and well-known original work of this school, the so-called dying gladiator, perhaps more correctly a dying Gaul ; and probably another in the group at the villa Ludovisi, known as the *Arria and Pætus*.

About this period and under this sentiment and influence the bronze original of one of the most celebrated and admired works of ancient art which time has bequeathed to us was executed, the *Apollo of the Belvedere*. An antique bronze statuette (with the supporting tree-stem) in the possession of count Stroganoff (which was found in a cavern at Paramythia in the neighbourhood of Joannina in 1798 with other bronzes, three of which are in the British museum) shows that the left hand held the ægis and not a bow, as was assumed in the restoration of the Vatican marble : this marble, beautiful as it is, can only be a copy of Hadrianic time from the bronze original.

Rome.

The conquest of Greece by Rome was the death-blow to all purely Grecian art as embodying the Grecian sentiment and purpose. Nevertheless, more than a mere mechanical power survived ; and the removal of artists together with works of art to Rome was accompanied by a revival, during which works among the most precious that have been preserved to our days were executed. The inborn power of art, unable to expand into those higher regions of originality which the period of Grecian glory had kept free, was now given up to production rather than creation, and to the gratification of a patron rather than as a thank-offering to and glorification of a god. The splendour of what has been called Roman art was the produce of enslaved

Greek genius, and the soul of the ideal was equally in bonds. Nevertheless, some marvellous works in marble were executed (almost purely subjective it is true or admirable copies of the great originals), and among these are now some of the most noble gems of our modern museums. The Hercules torso of the Belvedere, the admiration of Michel Angelo, attributed to the Athenian Apollonius; the Farnese Hercules by Glycon, the originals of both works having been probably in bronze; the Venus de' Medici, by Cleomenes of Athens; the Venus of the Capitol, the Callipyge, and the crouching Venus after Dædalus; the Pallas of the Ludovisi villa; and the portrait statue of a Roman orator, known as the Germanicus of the Louvre, by another Cleomenes; are believed to be copies of this period. We have already referred to the Apollo of the Belvedere as being a copy of this later time from an earlier bronze original, with which may also be classed the Diana of Versailles and the Ariadne of the Vatican. The pillage of Greece by Rome brought into the latter country, mainly to the capital, though also spread about among the imperial and other villas of the peninsula, a crowd of the finest works in bronze, of all periods of Grecian art; a crowd so vast as to be thought almost incredible.

Thus we learn from ancient history that Scaurus was said to have possessed 3000 bronze statues, which Pliny tells us he used in adorning a temporary theatre. These doubtless formed some of the riches taken by Sylla from the luxurious cities of Asia minor. A fine bronze vase in the Capitoline museum, an inscription on which states it to have been given by Mithridates to the gymnasium of the Eupatorians, may have been part of the same plunder. At an even earlier period, when Syracuse was taken, the Roman conqueror Marcellus sent one half the artistic spoils to Rome to adorn the public places and buildings. And at the last, after all previous spoliation, some idea of the extent of the immense employment of bronze in Greece may be formed from

the record that the Roman consul found 3000 bronze statues remaining at Athens, as many at Rhodes, and an equal number at Olympia and Delphi.

Some of the most admirable portraits of Roman personages were the work of Greek artists. Such are the Spada Pompey; the Augustus of the villa Livia; that also in the Vatican found at Otricoli; the bust of the young Augustus, and another equally fine in the British museum; the Agrippina of the Capitol and other works in marble. Thaletius, a Greek bronze caster, worked at Rome in the first century of the empire. The museum at Naples is rich in portraits, statues, and busts of bronze: many of great excellence; a few of an early period, others of Hadrianic and later time.

Art had steadily declined in Greece and her colonies before their final conquest by Rome. The original religious feeling, the desire to represent to the senses the ideal creation of the intellect, had been satisfied, and could not be surpassed without a new inspiration; a realistic sentiment naturally followed and, by the impersonation in marble or in bronze of those forms of the beautiful human figure which they knew so well, art was gratified for the while, and the less intellectual and more sensuous eye was pleased, but soon to satiety. The higher intellect roamed among philosophic dreams which she could not embody.

Novius Plautius was a Roman sculptor who worked about 250 B.C. His name is incised upon a little group representing a youth and two satyrs which forms the handle to the celebrated cista in the museum of the Jesuit college at Rome. In workmanship it is very inferior to the admirable engraving on the body of the cista. The name of Publius Cincius Salvius is inscribed on the huge bronze pine cone which formerly surmounted the mole of Hadrian. Titius Gemellus modelled his own bust. Flavius Largonius made statuettes, and Copronius fourteen figures to represent nations conquered by Pompey. Decius cast a colossal head for the consul Publius Lentulus Spinther (B.C. 56). Until

about 190 B.C. nearly all the important temple statues at Rome were of bronze.

An art more purely Roman displayed itself after the period of Augustus, when it became more and more subject to mere architectural decoration and portraiture.

Of antique and fine workmanship worthy of that age are the four noble gilt bronze fluted columns of the Corinthian order, which now adorn the chapel of the Holy Sacrament in the Lateran basilica. The massive bronze doors of the Pantheon are still *in situ*. A bronze sculptor named Zenodorus was celebrated, in Nero's time, who formed a colossal figure of that emperor 115 feet high; but the power to produce such large works was already feeble, for, notwithstanding the emperor's readiness to find the richest material, Pliny informs us that the figure indicated that the art of casting statues of that size was lost. The huge head of Nero, in the court of the Capitol at Rome, is supposed by some to be a portion of this figure, but Zenodorus can hardly have been guilty of such inferior modelling. Sculpture had still further and rapidly declined from the period of Nero to that of Trajan, although there is excellent work upon the bas-reliefs of sarcophagi and buildings of the latter reign. The gilt bronze figure of the youthful Hercules, in the Capitol, is probably a Roman work of the decline.

Another revival occurred at the period of Hadrian (A.D. 117-138): that emperor giving great encouragement to the arts and endeavouring to revive the Hellenic spirit of a former time. But it did little more than reproduce earlier and better works, and by their study induced a spirit of eclecticism rather than the fire of originality. This is shown in the otherwise beautiful marble figure of Antinous in the Capitoline museum. The greater number of the more important works in marble and bronze which have descended to our time, excepting those of which Pompeii and Herculaneum have yielded so rich a store, were probably produced during this period of revival. In some instances these

are original, but for the most part are copies in various sizes of the works of the great Grecian sculptors, several of which we have already referred to. A statue of note and rarity also, by some attributed to this time, is the huge and heavy gilt bronze Hercules recently found in Rome, and now placed in the Vatican. It may, however, be of earlier date.

The splendid centaurs of the Capitol, in black marble, by Aristeas and Papias of Aphrodisias, sculptors of Asia minor, are also works of this period and supposed to have been copied from earlier bronze originals. An admirable reduced copy of one of these, believed to be from the *atelier* of John of Bologna, is in the writer's collection. Other works of the period are the faun of *rosso antico* in the same Roman museum ; the dancing faun, and the Hermaphrodite in marble ; but few large works in bronze are preserved to us. Many smaller works in that metal, beautifully modelled, carefully cast, and excellently finished in the details, may also with probability be attributed to this Antonine Græco-Roman revival.

The equestrian statue of M. Aurelius on the Capitol is a Roman work, and important as the only antique equestrian statue in this material which has been preserved to our days ; a fact owing, it is said, to a belief among the iconoclastic Christians of succeeding time that it represented the first Christian emperor, Constantine. Later and painfully inferior is the colossal bronze statue of Theodosius at Barletta ; a work of the end of the fourth century.

Probably the most meritorious works of the third century are the reliefs upon the sepulchral sarcophagi so much in use at the time of the Antonines, some of which are of great beauty. That in the Capitoline museum, which was supposed to be the tomb of Alexander Severus and in which the celebrated Portland vase of glass was discovered, may be instanced as an example of true excellence and in the highest *rilievo*. Many of these have Christian subjects and allusions intermingled with allegorical

representations of Grecian mythology. Numerous are the smaller figures and ornamental objects in bronze, the work of these centuries of the final decline of classic taste. Many of them, derived from models of preceding time, nevertheless perpetuate the forms of higher inspiration ; and a certain character of expression and style of workmanship, although rude, still convey the reminiscence of a former vigour : they are the spasmodic efforts of a decrepit and decaying art.

Toreutic Works.

We have already stated that the earliest figures of a large size were formed of beaten plates (*sphyrelata*) attached to a wooden core by pins. The art of beating from behind and thus producing *rilievos* of mere ornament or of subjects is also of the highest antiquity, and probably preceded the knowledge of casting. These reliefs (*emblemata*) were formed either by simple action of the hammer working from behind, and afterwards sharpening the outlines by the chisel or punch, or by beating the metal plate into a mould, previously formed by carving the subject in intaglio upon some resisting material. Both methods were applied to produce a vast number of objects in the precious metals and in bronze, and particularly for the ornamentation of objects for sacred and domestic use, as vases, cups, &c.

The British museum is rich in fine examples of beaten work of the good period of Grecian art. We may particularly refer to the two ornaments which once covered the shoulder buckles of a cuirass and back-plate, known as the "bronzes of Siris : " these are ascribed to some artist of the school of Scopas, and are marvels of breadth in style combined with minute execution. The British museum also possesses many admirable mirror cases in silver and in bronze. We have already referred to Etruscan works in the same collection.

As examples of the perfection attained in this class of work-

manship, although not of bronze, we may instance the silver cup in the Corsini palace at Rome ; the centaur and ivy leaf cups and the vase with apotheosis of Homer in the museum at Naples ; the superb objects in silver discovered at Hildesheim in 1867, and now in the Berlin museum, of which reproductions are in the South Kensington collection ; a silver drinking cup of extraordinary beauty, undoubtedly of Greek work, and worthy of the period of Lysippus, though probably of later date, belonging to Sir William Drake ; the Aquileia goblet at Vienna ; the Bernay treasure ; and, though of minor importance, a silver cup, adorned with sycamore leaves, in the writer's possession. The museum at Naples is perhaps the richest in bronze objects for domestic use, many of which are of great artistic beauty ; some are executed by beaten work, others cast ; others, again, by a combination of the two methods—the body of the vessel beaten, with handles, feet, &c., cast in the round (*epithema*) and riveted or soldered on.

Among the more important collections of antique works of sculpture, &c., in bronze, may be mentioned—in Italy, the Museo Nazionale at Naples ; at Rome, the Vatican, the Capitol, and the Kircherian museum ; at Florence, in the Uffizii ; Perugia ; Cortona ; Volterra ; the bronze horses at Venice ; the Victory at Brescia. In France at Paris, in the Louvre, and the Bibliothèque, and in the local public museums at Nismes, Arles, and other cities. In Germany, besides the important public and royal collections at Berlin, Vienna, and Munich, many interesting bronzes, some of which we have already mentioned, are scattered among the local city museums, as at Hanover, Brunswick, &c. In Switzerland, at Berne and Zurich. In Russia, at the Imperial museum in St. Petersburg, where is also the private collection of count Stroganoff. In Holland, at Leyden. Few or none, however, out of Italy can compete with our own national collection at the British museum, where are many works already referred to in these pages, and where the art of working in bronze is well represented from the most archaic period to the decline ; following

upon this is the South Kensington collection of objects of the mediæval and *renaissance* times. Some of the more extensive private collections of antique bronzes in Italy, in France, and in England have been dispersed within the last few years, and their important objects have been acquired by the public museums of Europe.

CHAPTER V.

THE USE OF BRONZE IN MEDIÆVAL AND RENAISSANCE SCULPTURE.

WITH the advance of the Christian religion, but not entirely consequent thereon, sculpture declined. Its greatest subjects were directly offensive to the Mosaic law, the spirit of which, as regards idolatry, was inherited and promulgated by the disciples of Christ. Paganism was moreover rotten at the heart ; and the grand old poetic spirit which had fed and developed classical mythology, crushed by despotism and scorned by philosophy and materialism, had faded away, leaving as its record the beautiful forms in which it had been so sublimely embodied. These, however, still afforded a standard about which priestcraft clung, which interest fostered, and to which ignorance still looked for aid. But among nations of Grecian, of Etruscan, and of Latin blood, the æsthetic and artistic desire was inherent and could not entirely perish : eventually its direction was altered and its application modified. Meanwhile the wreck of the Roman dominion, the inroads of barbarian hordes, and finally the removal of the seat of empire to Byzantium had throughout and rapidly undermined and debased the spirit of that wondrous creative faculty which at one time had attained such glorious perfection in Hellenic hands. The plastic art in all materials had risen under their guidance to the highest excellence which the world has ever known, or

probably will ever know again. Its progress had been gradual, its fall was rapid : yet it is difficult to conceive, with monuments so superb still existing and around, that it could have been permitted to sink so far. In truth there was no healthy soil for the encouragement of art in her higher walks ; merely a certain amount of technical ability was still maintained to administer to the pride of vanity and the lust of the eye, in fashioning innumerable iconic statues and busts, and in the fabrication of ornamental figures and vessels in rich or costly material. The downward tendency was however very swift, and the depth to which it fell in Italy was very low. The troubles and weakness of the western empire increased, while the wealth of Byzantium attracted the more competent artists, who there retained many of those processes which were gradually almost lost to Rome ; until the returning tide, forced northward and westward by the storm of iconoclastic persecution raging during the eighth century at Constantinople, dispersed Byzantine artists and Byzantine forms of art throughout the greater part of Europe.

Early Christian art, doubtless of high interest because of its symbolical reference to biblical and apostolic history and to the doctrines of our religion, was nevertheless, for the most part, extremely bad : nor did the steady increase and influence of the faith carry immediate improvement with it, but rather the reverse. From the fourth century until the tenth its manipulative faculty was continually on the wane, although we cannot but recognise an increasing effort to express a higher sentiment struggling with the incapacity to represent material form correctly.

Without any contemporary portrait from the life, unable and perhaps from reverential motives at the first unwilling to attempt a representation of the features and figure of the Saviour, a symbolism was adopted, which soon became an accepted method of representation, and the more so from its not being comprehended by those yet unconverted to the faith. It is recorded that Alexander Severus ordered a statue of Christ to be sculptured,

but there was no earlier model as a guide, and had it been executed the work must have been purely imaginary. The Christian had therefore to be satisfied with a typical emblem or monogram, or at most with the representative figure of the Good Shepherd; a youthful form in rustic dress, bearing a young lamb upon his shoulders and with a shepherd's staff in his hand.

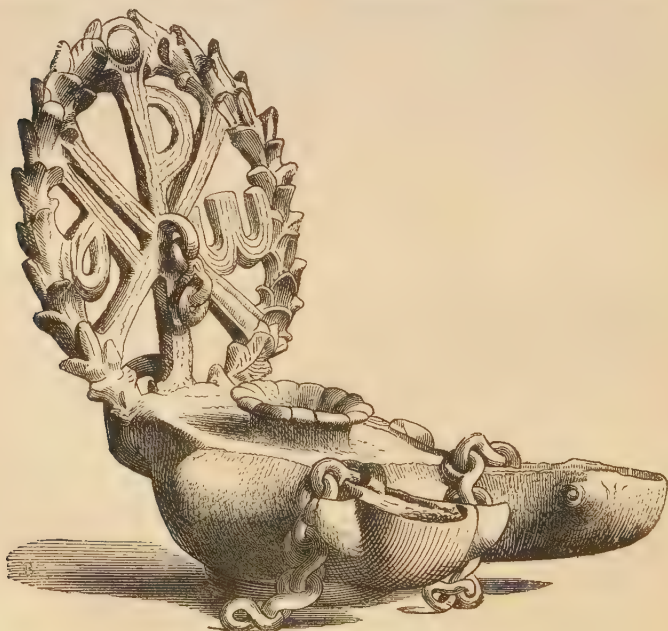
In the Christian museum of the Vatican are two bronze medallions, on which are represented heads of St. Peter and St. Paul facing each other; they are reported to have been found in the Callixtan catacombs, and thought to have a fair claim as early portraits of those apostles. During the reign of Constantine basilicas were rapidly built and richly furnished with altars of wood covered with silver and canopied by a *baldacchino*; on these were crosses and statues, formed of the precious metals and adorned with gems and jewels. Gilt bronze sarcophagi lined with silver were made, to contain the bodies of St. Peter and St. Paul. The high altar in St. Peter's basilica was cased in silver and gold, and was surmounted by a jewelled cross, in weight 130 lb. of gold; the choir paved with the former metal, while golden statues of the Saviour and of some of the apostles stood around, and lamps of the precious metals burned continually. The basilica of St. Paul was similarly enriched; and the wealth of the churches in ornamental and sacramental vessels was, according to Anastasius, enormous.

Nor was the love of splendour confined to sacred purposes: for during the reign of the first Christian emperor the members of the imperial family, followed by the wealthy of the land, were extravagant in the use of the precious metals and jewels for the adornment of their houses and their persons with rich stuffs and richer ornaments. Metal-work was greatly encouraged and, as St. John Chrysostom complained, the goldsmith's was the office most highly esteemed.

Works in gilded bronze naturally took their place where the more valuable metals were deemed unnecessary, or their semblance

sufficed. But of all these little or nothing is left to us, and we can only judge of the comparative rudeness of the art from sculptured bas-reliefs, for the most part on sarcophagi of the period, and representing Christian together with typical subjects from the Old Testament history.

In metal-work we have a few spoons and pateræ of silver ; the remarkable sacramental ewers or cruets of the fourth century now preserved in the Vatican ; the casket of silver found with other objects on the Esquiline in 1793, and now in the British museum ; some silver objects in the possession of Mr. Franks, and others in various collections. Bronze lamps, curious in symbolic form, or



EARLY CHRISTIAN LAMP.

ornamented with crosses and other emblems of the faith, have been found in the catacombs and elsewhere, several of which are in the Christian museum at the Vatican, in the Uffizii at Florence,

and in the British museum ; one, extremely well wrought, in the form of a fish, and probably of earlier date, is in the writer's collection, as also a remarkable set of sacramental vessels found in upper Egypt : these are of the earlier years of the seventh century.

The most important work in bronze sculpture which has



SEATED STATUE OF ST. PETER.

descended from those days to ours, is the seated statue of St. Peter, in that saint's basilica at Rome, a work ordered by Leo I.

Its general aspect is that of a senatorial iconic statue, a work of the fifth century, and unusually good for the debased art of that period ; not wanting in a certain rigid dignity, and remarkable for technical skill and finish, which would corroborate the opinion, supported by a Greek inscription which existed on the original marble chair in which the figure was seated (now replaced by a bronze chair of the fifteenth century), that it may be the work of a Byzantine artist. An important gilt bronze work, ascribed to the seventh century, is the chair or throne of Dagobert (so called) at Paris, of which an electro-deposit copy is in the South Kensington museum. It is not, however, all of the same period ; the lower portion being probably ancient, while the upper is an addition of more recent time.

We ought not to forget the fact that under Constans II., during his visit of twelve days to Rome in 663, the removal of all bronze and many other works of art considered worthy was accomplished by that fratricide emperor, who then finally robbed the eternal city of her chiefest remaining works of art. Among these, according to Nibby, were the statue of Trajan and the gilt bronze tiles which covered the dome of the Pantheon : all were shipped for Constantinople but lost, by shipwreck or by Saracenic spoliation.

At Byzantium, where the processes of various arts had been preserved, a great work in bronze was executed by order of the emperor Justinian in the year 543. This was a column covered with plates of that metal and surmounted by a colossal equestrian figure of the emperor, some thirty feet in height ; also of bronze. It is remarkable that the artist, Eustathius, is said to have been a Roman, from which, perhaps, we may infer that the plastic art was still superior in that city. This column, although ruined, was not melted down till the sixteenth century. Another important work, which is thought by Mr. Perkins and other authorities to represent the emperor Heraclius and to have been cast at Constantinople by a Greek artist named Polyphobus,

in the seventh century, is the colossal bronze statue now standing at Barletta in Apulia. Giovanbatista Finati on the contrary, judging from comparison with the coins of the two emperors, concludes that it is intended for Theodosius the great, and a work of the last quarter of the fourth century, with which period the Roman military dress and accoutrements would better agree. He wears a diadem of pearls in double row on his head ; in the right hand the cross is held aloft, and his gaze is heavenward. This statue, stranded upon the beach, was set up and restored by the Neapolitan bronzist, Albanus Fabius, in 1491. At Ravenna was the bronze equestrian statue of the emperor Zeno, cast at Constantinople ; on his left arm was a shield, while his right-hand held a lance.

The rigid formalism of the Byzantine style, accompanied by great excellence of technical power, came like a returning wave and extinguished almost the last spark of the ancient classic manner. In the seventh century it had appeared in Italy, and was extending its influence and manner throughout the west, then fast sinking into comparative barbarism. But few plastic works of large size were produced, particularly in bronze ; while, on the other hand, a careful execution and high finish of the details (such as rich ornaments of the dresses, thrones, &c., in oriental taste) may be observed in the paintings and ivories of this period. The manner became stereotyped, and under the influence of the eastern church lasted almost unchanged in some countries for several succeeding centuries, in fact nearly to our own day, as may still be seen in modern works produced by the monks of mount Athos. Many interesting lamps of terra-cotta and of bronze, adorned with early Christian symbols, ornaments, and figures in the Byzantine style, are preserved in museums. That of the Vatican is rich in examples ; some specimens are at Florence and in the British museum. No. 578.-72 at South Kensington, may be instanced as a work of this character, but without emblems. Another in the same museum, of purely Byzantine

character, though probably cast at a later period than its style might indicate, is the triptych, No. 1615.-'55 ; but whether originally modelled for casting in bronze, or moulded from an ivory carving, it would be difficult to feel assured. Some of the most important works were made for the embellishment of the basilicas and churches, and in the form of reliquaries, church vessels, &c. Upon these a wealth of precious metals and stones was frequently bestowed. Of such are the altar-front of St. Ambrosio at Milan, and, of later date, that of St. Mark's, Venice ; the altar of the abbey church at Petershausen, near Constance, now destroyed ; that of the cathedral at Basle, now in Paris ; the altar-front at Aix-la-Chapelle, &c. The South Kensington museum is rich in vessels for church use that well illustrate the metal-work of those centuries in gold and silver, and in gilded copper or *orichalcum*, adorned with enamel, with niello, and with cabochon stones of the Byzantine and Byzantine-romanesque and gothic periods : these form the subject of another handbook.

From the tenth to the twelfth century sculpture was at a very low ebb, and larger works produced between those periods are of great rarity. Ivory carving was practised, and the sculptor's art of these and succeeding ages is best represented in that material : a subject illustrated by Mr. Maskell in his introduction to the catalogue of that section of the South Kensington museum, and in professor Westwood's supplementary volume on the reproductions from ivories in other collections.

Of works in bronze, the more important are the doors of various churches in Italy and Germany. It will now, however, be necessary to follow the course of our subject in different countries through the succeeding ages ; but before doing this we should direct attention to those bronze gates of Italian churches which were cast by order in Constantinople, and imported thence. Among these (the work of one caster, Staurachios, and the gifts of members of one family, the Pantaleone of Amalfi) are the doors of the cathedral at Amalfi (A.D. 1066), of Monte Cassino (1066),

of Monte Gargano (1076), and of S. Salvator at Atrani (1087). Portrait heads and subjects in panels are represented on them by means of incised lines, filled in with silver and with coloured (metallic?) composition.

The small remains of the doors of the basilica of St. Paul outside the Roman walls, which were for the most part consumed in the great fire of 1824, and which were also figured with silver inlay, are of the same character and origin; they were made by Staurontius of Constantinople (doubtless, another form of Staurachios), A.D. 1061-72. The bronze gates of St. Peter's, inscribed in silver inlay with the names of cities belonging to the Holy See, lost during the attack of Frederick I. in 1167, were restored to the old basilica in 1200, and were of similar origin. The bronze doors of St. Mark's at Venice are also of Greek workmanship; one of them is said to have been taken from Sta. Sophia at Constantinople, where some of the bronze doors, possibly the original, are still *in situ*. Of like workmanship, in style imitative of and derived from Byzantine handicraft, are the bronze gates of the duomo at Troja, of the earlier years of the twelfth century, about 1119-27, made by Oderisius of Beneventum, which have their figured decoration, consisting of portraits of bishops and others (the artist among them), in silver lines inlaid in panels: the lateral doors are similarly worked, but in niello.

Also figured in niello are the bronze gates of the Grave chapel at Canosa, in Apulia, of remarkable design, partaking of the Byzantine character and the Saracenic, but the workmanship of an artist of Amalfi named Roger, who is said to have made a candelabrum, now lost. These were works of the earlier years of the same century.

Italy.

We have seen that in Italy during the eleventh and twelfth centuries two influences were felt: the still lingering spirit of the

antique, which took a form known to us as the Romanesque, and the imported eastern manner from Constantinople. In some districts also, as chiefly shown in Sicily, the Saracenic element might be observed. The Byzantine knowledge of processes and their artistic style were also spread by the returning crusaders, extending far and wide. We have referred to bronze gates executed by Greeks, or under the influence of their manner. We will now take note of similar works by Italian casters, working independently.

Such are the doors of San Zeno at Verona, of wood, each valve covered with twenty-four panels, and every one a separate plate, beaten and not cast, separated and framed by mouldings, with lions' heads at the intersections: these, except two which bear the lion's head handles, are covered with *reliefs* of sacred historical subjects. They are fastened to the doors with bolts or nails, and the more recent were probably produced before the termination of the eleventh century; all are, however, very rude, particularly those of the left wing, some of which were perhaps the work of Guglielmo and Nicola da Figarola, in 1171. Those of St. Clemente, near Pescara, are also formed of plates of metal having subjects in relief and nailed to the wooden foundation. They are, however, of later date, in the following century. At Beneventum the portals of the abbey church, a noble work, are covered with subjects in relief, in seventy-two compartments. They are probably of the middle of the twelfth century, and of some technical excellence, in manner not quite free from Byzantine influence but more Romanesque, and inferior in style to those of Ravello. The doors of St. Ambrosio at Milan, enclosing panels of the earlier work, may probably be also of about 1170. Those of Trani and Ravello, dated A.D. 1179, and the smaller one, of the northern side aisle, at Monreale, are of the twelfth century, cast by Barisanus of Trani: they are remarkably fine works, having subjects in relief upon the panels, which are separated by arabesque mouldings of great richness, with rosette-formed bosses at the

intersections and lion's head handles. In these the artist frees himself from Byzantine influence, and throws great life into his figures.

At Pisa the architect Bonnano was also eminent as a bronze caster. He executed the gates for the duomo, of which the smaller pair remain at the southern transept, the larger having been lost in the fire. These show a great advance in respect to artistic modelling and composition beyond those of St. Zeno, but are somewhat of Byzantine character. The casting is also well executed. Full of subject, they represent incidents in the life of Christ on sunken panels, the stiles being enriched with rose-like bosses, and surrounded by a massive cord moulding. They were made about A.D. 1180. Casts of them are in the South Kensington museum (No. '65.-58). He also cast the noble gates for the western portal of the cathedral at Monreale; a work full of composition and rich ornament, but also of marked Byzantine sentiment. In Rome, at the oratory of St. John in the Lateran baptistery, is a small pair of solid cast doors, with a few figures in relief and designs of buildings, &c., in incised lines; they are by Uberto and Piero di Piacenza in 1195.

We have dwelt somewhat longer upon these works because they are important as illustrating the bronzist's art at a period when, although sculpture had sunk very low, a movement was about to take place which eventually led to throwing off the trammels of Byzantine mannerism. The introduction of northern pointed architecture and its accompanying system of ornamentation speedily followed. We have, indeed, little else left to us of bronze works of that period in Italy, with the exception of some bells, and probably some few of the eagle-formed lecterns—one of which, that in the church of St. Ambrosio in Milan, is of very early date. The number of crosses and altar candlesticks is somewhat larger: but these are more rare of Italian than of German or Flemish production.

Among bronze works of the latter end of the twelfth or early

thirteenth century mention must be made of the wonderful candlestick in Milan cathedral. In design it is a mixture of Byzantine and Romanesque, while the sentiment and action of some of the groups and figures would suggest the earlier years of the thirteenth rather than the twelfth century. A cast, by Pietro Pierotti of Milan, of this remarkable work is in the South Kensington museum (No. '67.-1). The bronze door of the Lateran sacristy is stated to be by Albertus and Petrus "Lausenensis" (of Lausanne?), and of the year 1203.

The influence of the Pisan school under Nicola Pisano was the first great motive change; the budding forth of the *renaissance* of the plastic art under modified classic forms and ornament, to which a picturesque element not derived from classic models and a religious sentiment which Christianity alone could impart were superadded. Giovanni, the son of Nicola, still further promoted the new movement, but it is to Andrea that we owe the greatest bronze work of the early revival. The gates of the baptistery at Florence were, according to some statements, cast after Andrea's designs by bronze founders from Venice. We shall return to the consideration of this noble work.

The pointed style, which had thoroughly established itself throughout the northern and western countries of Europe during the thirteenth, the fourteenth, and fifteenth centuries, never took so firm a root in Italy. But the Italian artists, with that quickness of perception and appreciation of the beautiful which are inborn to them, modified and adapted the pointed architecture and ornaments to their own ideal, producing thereby works of the greatest beauty, which unfortunately, however, frequently ignore the great principle of true "Gothic" art, viz. construction, to which ornament is correctly made subordinate.

The Italians pursued their own course: the regeneration of art in Italy was upon other principles and guided by another sentiment than that of the countries beyond the Alps; the old classic blood was still mixed in their veins, and the advancing flood

of the aspiring northern style, broken into many streams by the Alpine barrier which it had to pass, was soon met and stemmed by the tide of classic revival. This in its turn flowed northward, submerging and drowning the better and more original (inaptly termed) "Gothic," and soon degenerated into an objectionable and nerveless pseudo-classic mannerism, overlaid by a fungoid and unhealthy growth of *rococo* scroll ornament.

The same sentiment that influenced architecture as the leading art also modified the sculptors' and the painters' style ; these were again followed by the silversmith, the jeweller, and the potter. Their debasement was universal : and at last art and its appreciation fell so low as to sweep away monuments of a purer time, or to immure them beneath the weight of works which deface so many fine churches in France and Italy. Fortunately in England those earlier works were rather neglected than "improved : " this was not, however, the consequence of a better taste ; for in architecture, the National Gallery and certain terraces in the Regent's park—in sculpture, the equestrian bronze statues of Wellington and George IV.—in pottery, the productions of Spode—and in silver, the "king's pattern" spoon, are extant witnesses to the poverty of an artistic capacity, and curiously inferior to some of the contemporary works in painting.

Tuscany.

For greater convenience in the study of our subject, it will perhaps be well first to confine attention to the most important and abundant source of the great revival in the sculptor's art, Tuscany. That love for the production of works in bronze, which had led to such technical excellence on the part of their Etruscan forefathers as to make them the furnishers of armour, candelabra, vases, and other ornamental objects of that material, to the ancient world, even to Athens in the days of Pericles, after a long enervation and perhaps stimulated by the works of

Byzantines and of their immediate followers in the south of Italy, we now see first springing into new life by Andtea's production of the noble gate of S. Giovanni.

With the exception of the Cosimati family, sculptors and mosaicists of admirable taste, the Roman sculptors had sunk down to mere mechanics ; and the Byzantine mannerism showed no progress. We know but little of the power which Merovingian taste exerted beyond the goldsmith's art ; and the Carolingian influence had been short-lived. The Goths and Longobards would seem to have had no art of their own.

But the awakening of dormant energies, wearied and sunk in the dark night of ignorance and discord, was, as we have already said, due to the inborn genius, fostered by a true appreciation of the works of antiquity, of the Pisan Nicola, son of a notary of that city, and born about 1205 or 1207. The works of this truly great artist, the father of *renaissance* sculpture, who during his active life laboured in various parts of Italy, aided and succeeded by his son Giovanni, spread far and wide the seeds of improvement in an art, which, gradually developing, produced much noble fruit three centuries afterwards. Nicola's work, like that of the Comacines and of the Cosimati, was for the most part in marble : indeed the bronzes on his latest important undertaking, the fountain at Perugia, were cast by maestro Rossi in 1277, after Nicola's designs. Of the works of Giovanni (his son and scholar) which although imbued with the father's manner were wanting in the original fire, we have none in bronze ; a material which seems to have been reserved for his scholar Andrea, not his blood relative, although as an artist greater than he. Andrea Pisano da Pontedera, the son of Ugolino di Nino, advanced beyond the architectonic trammels which had bound the works of his masters, though with golden cords, and entered the more poetic atmosphere of allegory, steadied nevertheless by a well-balanced propriety and earnest simplicity of composition, and imbued with pathos. Andrea was born in 1270, and worked first, when

young, in the school of Giovanni as an apprentice ; afterwards he seems to have gone to Venice, where it is possible that he may have gained from Byzantine workmen some knowledge of the art of bronze casting ; for soon after his return we hear of him as the best sculptor in that material in Italy. He made a bronze crucifix for Clement V. which he sent as a present to that pope through his friend Giotto. His greatest work, the gates for the baptistery of san Giovanni, was modelled by him in 1330 ; the inscription upon them, "*Andreas Ugolini Nini me fecit . A.D. MCCCXXX,*" referring to the time when the model was ready. It took him nine years completely to finish them in bronze. These noble doors now hang on the south side of the Florentine baptistery, and are surrounded by a rich frieze, subsequently modelled and partly worked by Lorenzo and Vittorio Ghiberti : they are divided into twenty large panels and eight smaller ; the former representing events in the life of St. John the baptist, the latter having allegorical figures of the Virtues. The designs for these admirable compositions have been attributed by Vasari and other writers to Giotto, Andrea's friend, and doubtless the influence of the mind and works of the great painter had its effect on Andrea. But in truth sculpture was in advance of painting at that time, and we see no reason to doubt that the invention of these admirable groups, so full of sentiment and purity in expression, so natural and truthful in the telling of their story, so easy in the pose and elegant in the drapery of the figures, and elaborated with such painstaking and technical ability, emanated from the mind of Andrea, as their execution was due to his superintendence and handiwork. Almost all we know of Andrea is learnt from these gates. He did work, chiefly architectural, at Venice ; modelled some bas-reliefs for Giotto's campanile, and some statues for the façade of the duomo ; a Virgin and Child for the Bigallo, and one for the Campo santo at Pisa ; another for the façade of the Orvietan duomo, on each side of which is the figure of an angel in bronze, cast by Lorenzo Maitani. He died at Florence in 1345. The

technical and artistic knowledge conveyed to so many by the production of these gates, which were the admiration of the signory and people of Florence, led to the formation of a school of sculptors in bronze at that city, who, following or leading as the case might be, the spirit of art in their day, continued to flourish for upwards of three centuries.

In the meantime, Siena had also given birth to artists of high ability: the chief among them Maitano di Lorenzo—the architect, from its first stone to its entirety, of that magnificent casket in marble, the cathedral of Orvieto. Round this wondrous structure clustered in loving toil, like bees about their comb, a very crowd of artists and artisans, aided by the voluntary labour of admiring citizens. Their great leader, the “capo maestro,” was Maitano, architect, sculptor in marble and in bronze, mosaicist, and philosopher, who has left us on this façade the history of our faith so writ in marble that “he who runs may read.” But these are not of bronze; and we may not dwell on the artistic beauty of “the four piers.” We must look upwards to see the symbols of the four evangelists in that metal, which were cast (as it is said) by him in the last year of his life, 1330. His son Lorenzo, who afterwards went to Perugia, was also a bronzist. The seated group of the Virgin and Child was cast by maestro Buzio di Biaggio, after a model, as it is said, by Andrea Pisano. Not however till 1371 did Siena’s greatest sculptor see the light, Giacomo della Quercia, the son of the goldsmith Pietro d’ Angelo di Guarnerio. In his hands both marble and bronze were at command, although his more important works at Bologna and elsewhere are in the former material. This was by accident, for had he succeeded in his competition with Ghiberti for the second pair of the baptistery gates, his fame would have been perpetuated in metal rather than in marble. One work by him in bronze is the *rilievo* panel on the font in the Sienese baptistery, which he had been commissioned to execute in 1416, but which was not finished till 1430, and represents the calling of St.

Joachim : a fine work, ably grouped. Quercia died in 1438. Of other Sienese sculptors who worked in metal, Il Vecchietta (Lorenzo di Pietro di Giovanni di Lando) was a scholar of Quercia, and executed a silver statue of St. Catherine, now lost : he worked in other materials as a sculptor, and also as painter, architect, and goldsmith. The bronze tabernacle adorned with cherubs above the altar in the duomo at Siena is by him ; and a statuette, the risen Saviour. In the collection at the Bargello in Florence is the recumbent draped effigy of Marino Soccino by Vecchietta, a striking and pathetic work, but somewhat hard and dry, as though cast from the dead model. Other works by him at Siena are the statues of St. Peter and St. Paul, at the Loggia de' mercanti ; and a bronze Christ, and angels bearing candelabra, in the chapel which he built and endowed at the hospital della Scala, the former of which he inscribed, "*Vecchietta, pictor, pro sua devotione fecit hoc opus.*" He died in 1480 at the age of 78.

The artists of Siena, during the course of the sixteenth and subsequent centuries when her government was merged in that of Florence, were of minor consequence, and need not detain us.

Returning to Florence, which city had learnt and profited so much by the works of the Pisan school, followed by her own Arnolfo and Orcagna, we shall find that two of her greatest artists did not appear upon the stage until the end of the fourteenth century, some hundred and fifty years after the great revival of sculpture by Nicola Pisano. These were Lorenzo Ghiberti (1381-1455), the leader if not the creator of the pictorial school ; and Donatello, made of sterner stuff, more realistic and naturalistic in his treatment of plastic representation.

The spring-tide of the *renaissance* was then in full flow, and the earlier religious sentiment, undermined by the revival of classic learning and philosophical speculation, was losing its purity and fervour, while the appreciation of the excellence of antique art had led to the adoption of its forms and ornamentation, more or less modified by individual and local tastes. The

results were, however, extremely beautiful, and in themselves the sculptures of this period claim the next place in our admiration to those of the schools of Greece. A craving for artistic creation became almost general, and city rivalled city in the erection of temples rather than churches, and in the enrichment of those already built. Andrea's gates to their "*bel san Giovanni*" did but stimulate the Florentines, then in the full growth of their prosperity, to the desire for more. Meanwhile Ghiberti was studying metal-work under the teaching of his excellent father-in-law, Bartolo di Michiele, the goldsmith, and painting in fresco at Rimini; until, informed that the signory and merchants' guild had decided on erecting another set of bronze portals to the baptistery, and had invited artists to compete for the work, he, by the advice of Bartolo, returned to Florence, entered his name for the artistic tournament, and was to break a lance with his townsman Brunelleschi, with Quercia and Valdambrini from Siena, with Nicola of Arezzo, and with Simone da Colle. Donatello did not compete. The trial piece was to represent Abraham's sacrifice. The field was soon left clear to the two Florentines, and the judges could hardly decide upon the superior merit of either work. But Brunelleschi's more critical eye convinced him of his rival's superiority, and his noble heart responded when he yielded the palm voluntarily to Ghiberti. The record of this interesting episode in art history remains to us in the original trial pieces, which are preserved in the museum at the Bargello in Florence, and of which electrotpe reproductions are in the South Kensington museum (Nos. 71.-29 and 30).

In this great work, Ghiberti's first gates, the artist indulges less in his pictorial tendency than is to be seen in his later works, from which he has been termed by Perkins, not inaptly, a "painter in bronze." They are divided each into fourteen panels, surrounded by mouldings and by stiles, the latter enriched with leafage, and having at the intersections a projecting head in high relief. The five upper rows on each door, twenty in all, relate to

the history of our Lord ; the remaining eight are occupied by figures of the four evangelists above, and four doctors of the church below. As Mr. Perkins justly says : “ One can never tire



TRIAL PIECE BY Ghiberti.

in looking at these exquisite works, which combine the purity of style of an earlier period with a hitherto unattained technical knowledge and skill in handling.” After twenty-one years’ labour, aided by no less than twenty artists, these gates were set up in 1424. All the knowledge and dexterity to which a long course of practical experience had brought both hand and eye, aided by a mind gifted with marvellous inventive power, were brought to bear upon them. The decision of the signory, that events from

the old Testament history should be represented upon the gates, on the larger spaces afforded by dividing each valve into only five panels, gave more scope for Ghiberti to indulge in his pictorial rendering of the compositions with a plastic facility that stands unrivalled. He states that he strove to imitate nature to the



PANEL FROM Ghiberti's EARLIER GATE.

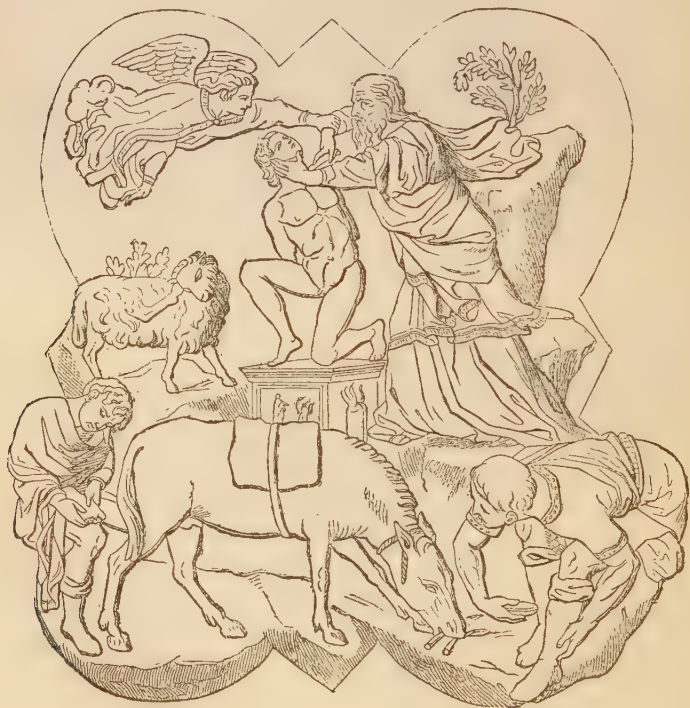
utmost by studying how forms strike upon the eye; and endeavoured to blend the theory of pictorial and sculptural art—a fallacy offensive in practice by any hand inferior to his. But one gladly forgets all theory and rule in gazing upon the wonderful art displayed in these compositions, in which the effects of perspective and distance upon the *rilievo* and details are conveyed to the eye as by a pencil drawing, and with an accuracy

that almost defies criticism. Nor can we but admire the poetic representation of the different actions of a history, depicted on the one panel in varied groups connected by a natural sequence. The subjects, surrounded by simple mouldings, are framed by a richly ornate stile continued round the four sides of each valve. On the lateral ones are niches enclosing statuettes (twenty-four in all) of scriptural personages, between which, at the angles and intersections of the panels, are projecting heads; among these are portraits of himself and of Bartoluccio. We may not dwell longer upon the beauties of these wondrous gates, "*Che starrebbon bene alle porte del paradiso*," to use Angelo's words, but pass on to record other and minor works by this great man. His second gates, the chief work of twenty-three years of his life, and not completed till he was seventy-four, replaced his first in 1452, which were then transferred to where they now remain, on the southern side of the baptistery. In the South Kensington museum is an ably-executed electro-deposit reproduction of them (No. '67.-44.), but wearying the eye by their garish gilded surface, which, in the writer's opinion, had been better omitted. It is true that the originals were gilt some years after their completion, but not by the first design of the artist; it was a splendid extravagance, parallel to that of Nero in gilding the noble work of Lysippus. In both instances the addition would have been "more honoured in the breach than the observance," although time and wear have supplied some remedies upon Ghiberti's work. A partial gilding, say of the architectural mouldings and features, would have been preferable, leaving untouched the *rilievo* subjects, the artistic excellence of which could be so much better seen and appreciated in the rich colour of the bronze.

Ghiberti died in 1455, leaving the rich frieze which now surrounds Andrea's gate to be completed by his sons and scholars.

To one of these, Vittorio Ghiberti, has been assigned by Gaye the beautiful bronze pedestal or altar in the Uffizii, which has also been claimed as the work of Desiderio di Settignano. On this,

among exquisite surrounding foliated enrichment and mouldings, are two admirable panels in *rilievo*, one representing a sacrifice, the other a triumph of Ariadne. A contemporary replica of the last, perhaps the sole remains of a companion pedestal, or specially repeated from its greater excellence, is in the writer's collection. Filippo Brunelleschi, the architect-sculptor, after competing with Ghiberti for the gates, and whose trial-piece is preserved with that of his more successful rival in the collection at the Bargello, seems to have devoted himself to the greater art,



TRIAL PIECE BY BRUNELLESCHI.

and we have no further record of works by him in bronze. Clustering round Ghiberti's great work was a school in which

many artists acquired invaluable technical knowledge of the sculptor's art in metal, and where their talents were confirmed and developed under the master's eye ; among these, and the more important, were Lamberti, Pollaiuolo, Michelozzo, and for a while Donatello.

Donato, the son of Nicolo di Betto Bardi, born at Florence in 1386, and generally known as Donatello, was perhaps the greatest sculptor of the revival until the giant art of Michel Angelo arose, subduing all. Ghiberti, admirable as he was, could not advance beyond the pictorial and miniature representation of histories beautifully told, and accompanied by an execution of the ornamental details worthy of his own, the goldsmith's, highly-developed art. In larger subjects he was deficient, nor did he ever work in marble ; but Donatello, while able to execute the most minute elaboration with loving care on both materials, could rise far higher in conception and creation. Since the fall of the eastern and western empires no equestrian statue of life or heroic size had been attempted, till Donatello modelled and cast the Gattamelata. As a lad he studied under Bicci di Lorenzo, and was protected and lodged by Ruberto Martelli the banker, his patron and friend. He travelled to Rome with his friendly critic and rival, Brunelleschi, to study antique sculpture and architecture ; returning after two or three years. His earliest important works as a sculptor are the Annunciation, a *rilievo* in stone at Sta. Croce—a work of great refinement—and the statues of St. Peter and St. Mark at Or San Michele : and his most highly elaborated work, the Martelli mirror, now in the South Kensington museum, is fully described in the large catalogue.

Perhaps his last work, and inferior, is the statue of St. Louis of Toulouse, over the portal of Sta. Croce in Florence. Befriended by Cosmo to the last, but broken in health and latterly paralysed, Donatello, who perhaps may be termed the Phidias of the revival, died in 1466, aged eighty.

Less picturesque than Ghiberti in his representation of sub-

jects in *rilievo*, we have in Donatello a greater artist, capable of mastering works of higher import and in a manner which had not hitherto been equalled. His statue of St. George is worthy to rank in grandeur of conception with the best efforts of any school or time ; while the minute care and finish which he could bestow is exemplified in the Martelli mirror. The South Kensington museum is rich in marble works by this great master ; the Deposition (No. 7577) and the Charge to Peter (No. 7629) are fine illustrations of his pathos and power of naturalistic representation : the latter being one of his finest works in that low *rilievo* known as *stiacciato*, in the use of which he was unrivalled. If Ghiberti was a “painter in bronze,” surely Donato may be termed an “etcher in marble.”

Simone, a Florentine of uncertain patronymic, who was engaged at Rome upon the bronze tomb of pope Martin V., was also occupied there assisting or assisted by Antonio Averulino, known as Filarete, in making the bronze doors of St. Peter's, which were executed about 1439. On this work we see the impress of a school whose master spirit is no longer there. Events of the life of pope Eugenius IV. are represented in panels ; martyrdoms of some of the apostles ; scenes from the life of our Saviour, &c. ; while among the ornaments upon the border are introduced such subjects from the antique as Jupiter and Gany-mede, Leda and the swan, &c., in violation of all propriety ; and on the lower stile, inside, Filarete has represented himself and his workmen going on a frolicsome jaunt with a well-laden donkey. At Prato, the beautiful lattice work in bronze, teeming with human and animal life among foliage, &c., made for the chapel of the Cintola in the cathedral, is a work of this school, which has been doubtfully attributed to Simone, who also worked in marble at St. Francesco in Rimini. Dello Delli, who was born about 1404, accompanied his outlawed father, Niccolo, to Siena, and there, in the year 1425, made a large figure in bronze to strike the hours on a bell, which was placed on the tower of the palazzo Pubblico

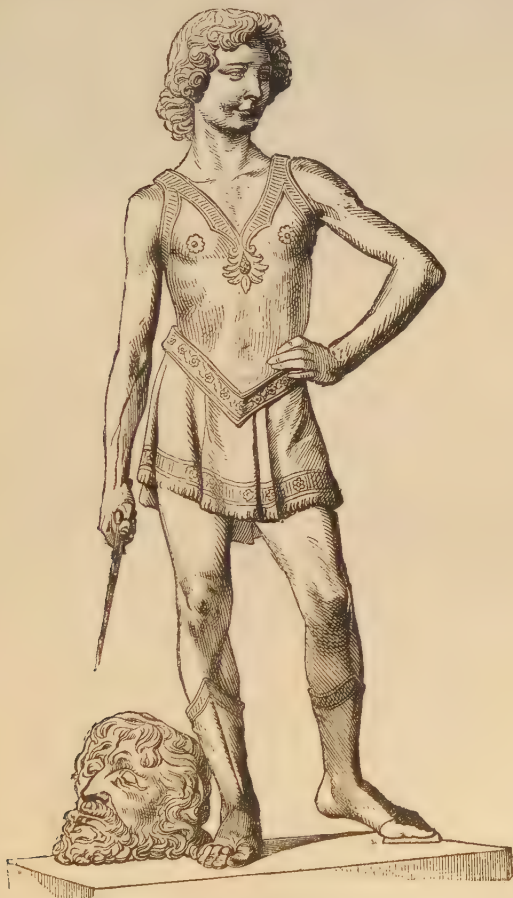
To preserve the sequence of Florentine bronze sculpture with greater regularity, we will, before considering the works of Donatello's great pupil, Verrocchio, and other able bronzists of his time, refer to one who for the most part was independent of the influence as he was also of the more picturesque tendencies of Ghiberti, and seems rather to have modelled under the guidance of the antique standard. He was Luca della Robbia, whose earlier sculptures were executed in marble (among which the justly celebrated group of singing boys is an admirable example), but who is more universally known as the modeller of those finer productions in glazed terra-cotta, with which his name has become inseparably associated.

Luca della Robbia (1400-1482) executed one notable work in bronze, the doors leading into the older sacristy of the duomo at Florence, of which there are casts at South Kensington. This is a fine work : each valve divided into five square panels, bearing subjects in *rilievo* and representing seated figures of saints, &c., attended by angels ; on the surrounding stile, at each angle of the panels, is a projecting head in full relief. The two upper panels represent, on the one the Virgin and Child with two angels, on the other St. John the baptist, similarly attended ; below these are the four evangelists ; and again, beneath, are the four doctors of the Church. Dignity and thoughtful repose are admirably expressed in these noble figures and their accompanying attendant angels. The group of the Virgin and Child is a most graceful composition. The projecting heads representing personages of both sexes and every age are effective and individually excellent : and, indeed, the general effect of proportion and well-balanced ornamentation on the whole work, though less picturesque in treatment and more strictly observant of the rules by which sculptured bas-relief should be guided, may well compare with the more composite designs and not more excellent modelling of his great and successful rival Lorenzo Ghiberti. These doors were begun by Luca in 1445. Their execution had been entrusted to the combined care

of Michelozzo, Maso di Tolomeo, and Luca; after the death of Masaccio, Giovanni di Bartolomeo was commissioned to polish and prepare the framing and hanging, which was completed in December, 1463. Michelozzo was then absent, and Luca was commissioned to finish the door. On examination of the various subjects no difference can be traced in the composition or manner of handling, and it is but reasonable to conclude that the entire modelling was the work of Luca della Robbia's own hand. We have dwelt rather fully upon the consideration of this grand door, considering it, as we do, so fine a model, and as the only work in bronze by this admirable sculptor.

Andrea Cione di Michele, called Verrocchio, the pupil of Donatello, born in Florence in 1435, was goldsmith, painter, and sculptor in marble and in metal, and second only as a bronzist to his great master. Of his admirable works as a goldsmith nothing remains to us, and the two *rilievo* subjects in silver, which adorn the altar-front made for the Florentine baptistery, alone exist of his sculptures in that metal. He cast a bronze ball to surmount the cupola of the cathedral. His works, by no means numerous, are marked by great individuality and highly-finished execution, not free from a certain rigidity and hardness of outline, which we lose, however, in the equestrian statue of Coleoni. A work of smaller size, but characteristic of his manner, is the youthful figure at South Kensington (No. 411.-'54.). In the Bargello at Florence is the David, a somewhat angular figure, but of considerable nervous vigour; it was executed in 1496. A graceful statuette is on the fountain in the courtyard of the palazzo Vecchio, a work probably of his later time—a child pressing a dolphin which spouts water. The admirable modelling and manipulative skill displayed upon the festoons and cordage of bronze, enriching the monument executed by him to the memory of Piero and Giovanni de Medici, in San Lorenzo at Florence, show what care he bestowed on details. But his greatest work was that portion of the model for the statue of Bartolomeo

Coleoni, the Venetian general, which he was enabled to execute before his death: this part, from the wording of his will, would



VERROCCHIO'S DAVID.

seem to have been confined to the horse, the second and finest equestrian statue of large size which had been produced since the decline of classic art. (See p. 95.)

Having modelled the horse, Verrocchio returned disgusted to Florence, after breaking its legs and head on learning that the signory intended Vellano of Padua to execute the figure. He was, however, induced to resume the work at Venice, and had not completed his new model for the charger when he was carried off by a violent illness, in 1488. He desired that his friend Lorenzo di Credi might finish the work; but it was entrusted to Alessandro Leopardi, by whom we may presume that the figure was remodelled, partly perhaps after Verrocchio's sketches modified by Leopardi. The casting and finishing were executed by the latter artist, to whom, indeed, at least an equal share of praise is due, and who was probably justified in inscribing on the saddle-girth "A. Leopardi, F." Also of Verrocchio's later period, although commenced some twenty years before (1484), is the group of bronze statues representing Christ and the incredulous St. Thomas, which occupies one of the niches outside the church of Or San Michele in Florence. It is a work of great expressive power and careful execution, but dry and hard in the lines, angular and heavy in the draperies.

Giovanni Francesco Rustici (1470-1550), a pupil of Verrocchio, who afterwards worked with and under the instruction of Leonardo da Vinci, was an amateur but assiduous artist, who executed some works in bronze. Among these was a Mercury for the Medici palace; a *rilievo* representing the Annunciation, for Spain; and his chief work, the group over the northern door of the Florentine baptistery, representing St. John disputing with a Levite and a Pharisee, in the modelling of which he is said to have been greatly assisted by Leonardo. Disappointed with the mean payment he received for this able work, Rustici, after wasting time and money in frivolous pursuits, went to France to undertake a statue of Francis I., which was never executed; and there he died in poverty.

Another abundant sculptor in bronze of this period (1433-1498) who also was a goldsmith, a niellist, and a painter, but

whose somewhat exaggerated manner in figure subjects and fluttering drapery is frequently objectionable, was Antonio Pollaiuolo, who had learned his art under Bartoluccio, and in the studio of Lorenzo Ghiberti. To his hand chiefly is ascribed the beautiful frieze that surrounds Andrea Pisano's gate, in which a quail is particularly pointed out as his work, and admirably true to nature. By him also were executed some of the *rilievo* subjects, representing the dance of Herodias' daughter and the feast of Herod, on the silver altar frontal for the Florentine baptistery. In bronze, among his most important and finest works, are the tombs of Sixtus IV. and Innocent VIII. at Rome, in which he shows his great skill as a modeller and caster and a high degree of artistic power. These qualities are particularly seen in the magnificent tomb of Sixtus, dated 1493, one of the grandest bronze monumental works of the *renaissance*, and which is so conspicuous in the chapel of the Sacrament at St. Peter's. The fine but realistic recumbent figure of the pope is placed upon a cushioned base, the sides of which are panelled, with allegorical figures of the virtues in exaggerated style, and enriched with foliage, mouldings, tassels, &c., of the most admirable execution. The mural monument to Innocent VIII. is a later and smaller work; it is placed on one of the piers of the cathedral, and represents the pope seated above, and recumbent as in death below, with surrounding figures of the virtues, &c. In St. Peter's also are the bronze candelabra that formerly stood at the sides or head of the tomb of Sixtus. The bronze doors which enclose St. Peter's chains in the sacristy of that saint's church "in vincoli" at Rome are another work by this master. They are covered with interlacing and foliated ornamentation in *rilievo* of great beauty, surrounding two panels that respectively represent the imprisonment and the liberation of St. Peter in bas-relief.

In the collection of the Bargello at Florence is a representation of the Crucifixion in bas-relief of bronze, perhaps an early but a powerful work, not authenticated, but eminently characteristic of

Pollaiuolo, and which, although exhibiting a too impassioned action in the figures and a too loose and fluttering drapery, is, nevertheless, of great pathos, occasionally recalling the sentiment of Botticelli mingled with that of Mantegna.

Bartolomeo Sinbaldi di Montelupo, Andrea Contucci, and Jacopo Sansavino worked also in bronze.

Benedetto di Rovezzano, many of whose works in sculpture seemed fated to destruction, came to England in 1524 to execute a bronze tomb for cardinal Wolsey. After five years' labour (on the cardinal's disgrace) Henry VIII. ordered its completion for his own sepulture; his death, however, anticipated that completion and it was laid aside. Subsequently Charles I. intended it for his tomb, but the parliament of Cromwell ordered that the figures should be melted. Beneath St. Paul's cathedral, Nelson's bones now lie in the sarcophagus, sole remnant of a tomb designed for the proud cardinal.

Piero Torregiano, the fellow-pupil with Michel Angelo, was born in 1472. It was while working together in the Carmine, that, losing temper in a dispute, he struck Michel Angelo so heavy a blow upon the nose as to crush it, and disfigure him for life. Lorenzo de' Medici was greatly angered at this act, and Torregiano fled from Florence to Rome, where he got but poor employ in stucco work, afterwards becoming a soldier in the papal army. Lacking advancement he joined some merchants journeying to England, and there recommenced his artistic occupations, entering the service of Henry VII. about 1503. He undertook the monument to Henry VII. in 1518, and went to Florence for assistants. On his return he completed the fine bronze shrine which is in Westminster abbey. It consists of a black marble foundation, enriched with bronze pilasters, bearing the king's emblems, and separating panels filled with subjects, as the Virgin and Child and various saints, in bas-relief, of bronze. The royal armorials, upheld by children, are at the ends. On the top are the recumbent bronze figures of Henry and Elizabeth,

his queen, in long and well-arranged drapery ; and the whole is caged in a Gothic chantry chapel of open bronze or brass work of great beauty, some part or all of which was probably wrought by English hands, anterior to Torregiano's employment on the monument, for his share of which he received the sum of £1500. An altar, also the work of that artist, was erected in front of the tomb, but was destroyed by Sir Robert Harlow. The fine bronze and gilded monument to Margaret countess of Richmond, also in the abbey, is likewise ascribed to Torregiano. The simply-habited recumbent figure, with feet resting upon the Lancastrian antelope, is one of considerable excellence both in modelling and finish. From England Torregiano went to Spain, where he did some work in terra-cotta.

Before we enter upon that period when Michel Angelo's genius imbued matter with new life—too transient, alas ! and leaving a more fatal mannerism than even that which had preceded, and a darker artistic death in life—let us note the progress of bronze sculpture in other parts of Italy. Tuscany had been the fountain-head, and even long after the decline of Byzantine influence, we find comparatively little had been done in other districts. The great bronze gates, which had been so abundantly produced in southern Italy during the twelfth, were not equalled or surpassed by works of similar or higher importance during the two next centuries. Marble was more in use, and we hear little of works in bronze throughout the central and southern states of the peninsula. A fine recumbent bronze of pope Innocent VII., the work of an unknown artist, is on his tomb in the crypt of St. Peter's.

In the north, during the course of the fourteenth and early fifteenth centuries, no bronze work of importance seems to have been executed or has descended to our times. A bronze, executed in 1416 by Jacopino the then director of the "*fabbrica del duomo*," is almost alone. It occupies a position in the centre of the roof of the apse in Milan cathedral, and represents

the Eternal Father in *rilievo*. At the Certosa are bronze doors cast after the designs of Amadeo (1447-1520), or the work of his pupils ; upon which the heads, &c., exhibit that earnest and severe manner, with cardboard drapery, which is observable in many of the works of his and of the Mantegazza school. These last able sculptors, Antonio and Cristoforo (*circa* 1473), were sons of a goldsmith, and therefore capable of undertaking metal work. As such they received a commission to execute an equestrian statue of Francesco Sforza in bronze, a work which they ultimately declined, and which was subsequently taken in hand by Leonardo da Vinci. One hundred thousand pounds weight of bronze was to be devoted to this statue: In 1509 Bernardino of Lugano or of Milan, a clever caster of bronze, was employed by Rustici of Florence to cast the group of St. John disputing with the Levite and the Pharisee, which we have already spoken of.

We have but little to record in bronze work at Venice during the earlier years of her existence. With all minor objects she was doubtless supplied by her commerce with the east. We read of brazen lions from whose mouths water constantly poured into the ancient font (seventh century) of the Torcello duomo. The right-hand door of St. Mark's is a Byzantine work which was brought from Constantinople in 1204 ; and the central, of earlier date, is strongly Byzantine in character, although seemingly the work of an Italian, and inscribed in Latin. It was made by order of Leone di Molino, the procurator, in 1112. The external gates are said to have been the work of Bertuccius, about 1300.

Alessandro Leopardi, who was working at Venice previous to 1487, was more important as a bronzist, and to his rendering of Verrocchio's design we owe the grandest equestrian statue in the world. Recent investigation would seem to show that the more important portion of this work is due to Leopardi, and that the figure of Bartolomeo Coleoni was entirely modelled by his hand,

which completed the horse left unfinished at Verrocchio's death, and also designed and executed the admirable base.



MONUMENT OF BARTOLOMEO COLEONI.

Frequent and careful examination, and an intimate knowledge of the bronze works by Verrocchio, would lead the writer to agree in the main with Mr. Perkins' observations on this noble group. Leopardi has affixed his name, inscribed on the saddle-girth, "A. Leopardi Opvs. V. F." It was completed in March, 1496.

Nothing can exceed the power and vigour of this group ; the horse is admirably modelled ; and the attitude of the rider, nerved to the combat, is strikingly characteristic of the defiant warrior. The details, carefully executed, are very beautiful. So delighted were the signory at Leopardi's success, that they commissioned him to make the great bronze sockets for sustaining the standard masts in the piazza before St. Marco, on the central one of which is introduced an excellent medallion portrait of the doge Leonardo Loredano. There is a copy of this socket, which is dated 1505, in electro-deposit, in the South Kensington museum (No. '63.-2, 3.).

Our limited space obliges us to refer to the introduction to the large catalogue, for notices of other bronzists and their works at Venice, Verona, Padua, and other Italian cities.

CHAPTER VI.

MICHEL ANGELO AND THE DECLINE IN ITALY.

A NEW era in the life of art seemed to be created by the magic touch of Michel Angelo. Sculpture and her sisters, earnestly striving to embody the sentiment they would convey in more expressive and intelligible forms of beauty, had already attained to high perfection in manipulative skill and plastic power, in which, nevertheless, the earnest motive for culture became dormant and its life-inspiring sentiment faded into mere fashion. The religion of art was again dead, and she became the handmaid of observances and the Church's splendour, of iconographic self-glorification, of eye service and the vanities or pride of life.

We must confine ourselves to the drier details of our subject. Michel Angelo executed nothing that remains to us in bronze. Condivi and Vasari, seemingly in error, tell us that he made a bronze *rilievo* of the Virgin and Child, which was sold to a Flemish merchant named Moscron ; but there is little doubt that they refer to the admirable group in marble, still at Bruges, and over the altar beneath which Pierre Moscron lies buried. In 1502 he was ordered to make another statue of David in bronze, for the maréchal de Gié, which was eventually completed by Benedetto da Rovezzano in 1508 and sent to France. It is no longer known to exist.

Michel Angelo's great work in this material was the colossal

seated statue of pope Julius II. which was set up over the great door of St. Petronio's basilica at Bologna in 1508, where it remained only till 1511, when a fickle populace, stimulated by the French troops who had entered the city in aid of the Bentivoglio cause, hurled the statue down and broke it into fragments ; these afterwards were used by Alfonso of Ferrara to form a cannon named by him his "Julius."

Angelo preferred working in marble ; in his conversation with the pope on the subject of this statue Michel Angelo told him, "that bronze casting neither is nor has been my profession," and "that I could not guarantee success." "Cast it until it does succeed," was the reply ; but Angelo states : "I was obliged to cast it twice ;" and again, "as half the metal did not melt, the figure was only completed to the waist, wherefore I was obliged before recasting it to pull the furnace to pieces." After relating his trouble and expense in the matter, Angelo writes : "But enough ! Having with great trouble at last set the statue up in its place, I found that my two years' labour had profited me four ducats and a half."

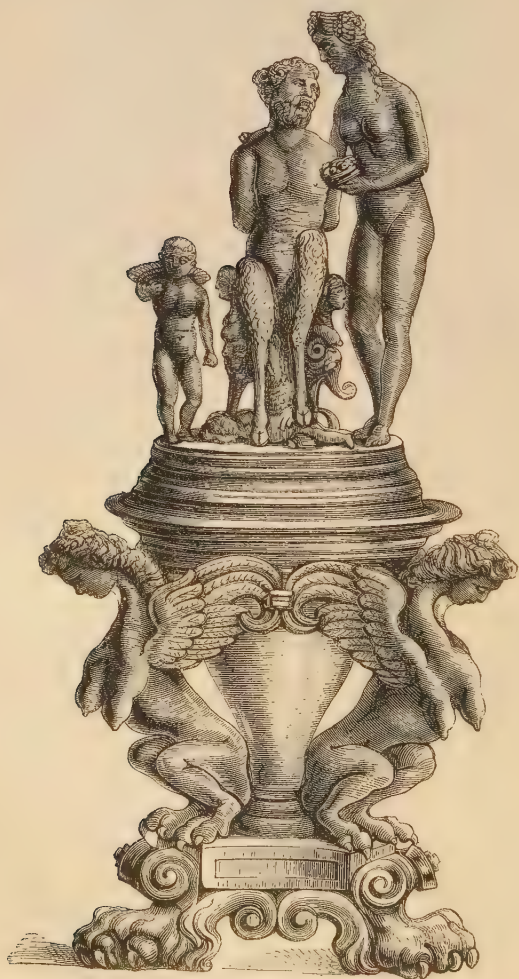
In the Louvre is a fine bronze figure of Apollo with the python, in Angelo's manner, and certainly of his school.

Guglielmo della Porta, of a Lombard family, adopted Angelo's manner after entering the service of Paul III. in 1547, whose monument was his finest work. It is surmounted by the seated effigy of that pope, a grand figure in bronze, while round the base were placed four recumbent allegorical figures of great power but dubious meaning, in marble. Two of these are yet on the altered monument in St. Peter's, the others are in the palazzo Farnese. A small bronze recumbent female figure with two children, perhaps representing Latona, is in the writer's collection, and probably is a carefully studied model by the hands of this able artist. One Tomaso della Porta, but not a member of the same family, cast the bronze statues of SS. Peter and Paul which surmount the Trajan and Antonine columns at Rome. He died in

1618. Daniele Ricciarelli da Volterra (1509-1566) modelled and cast in bronze the portrait head of Michel Angelo, probably that now preserved in the halls of the Conservatori at the Capitol, and which has been wrongly ascribed to Angelo's own hand. Leo Lioni, of a Comese family although known as "Il Cavaliere Aretino," worked much in bronze. His portrait medal of M. Angelo, taken from the life, is referred to by Vasari. He worked also for Charles V., for whom he made a portrait statue in bronze, which is now at Buon Retiro. Lioni also was director of the mint at Milan. Pompeo Lioni, his son, followed without improving his father's manner. Antonio Fontana (1540-1587), an able metal worker and bronzist in the rococo style, cast the rich bronze gates for the cancellum of the church of S. Celso at Milan. To this artist or to Annibale Fontana are ascribed the fine bronze candelabra in the Certosa at Pavia. Francesco Brambilla, Jacopo and Tomaso Casignuola, Simon of Pavia, and Giovanni Simone di Germano, ought also to be mentioned.

Benvenuto Cellini (1500-1571) was, without doubt, the greatest Florentine metal worker of his time, although it is probable that some less boastful artists, as Caradozzo of Milan, may have been his equals in manipulative skill, and perhaps his superiors in design. His earlier years were chiefly devoted to goldsmith's work in Rome and Florence; subsequently he went to Paris. The known works left by him are few, his bronzes being the more important. Of these the earliest executed is the bas-relief representing the "nymph of Fontainebleau," an ideal embodiment of the spring known as the "Belle Eau" in that forest. The nude recumbent female resting upon a vase, whence issues the pure element from which surrounding animals hasten to drink, is a mannered figure of overstrained grace and but ill-proportioned; in workmanship highly elaborated (a cast is in the South Kensington museum, No. '64.-104.). It was made in semi-circular form to be placed over the great door of the palace, and is now in the Louvre. His next bronze, the highly wrought but

startling bust of duke Cosimo, executed in 1546, is at Florence,



BRONZE INKSTAND : FORTNUM COLLECTION.

in the Bargello. Meanwhile he was occupied in preparing for his greatest work, the group of Perseus and Medusa: the original

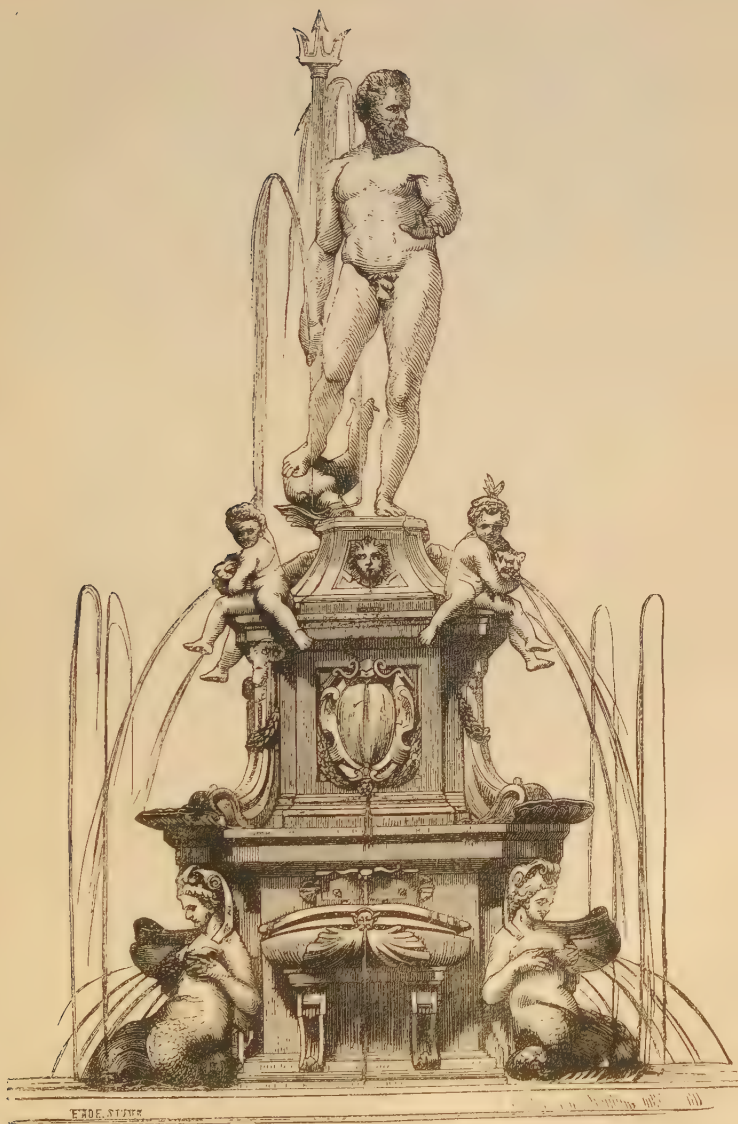
wax model of which is also preserved in the Bargello. Having made the fallen body of Medusa in a separate piece, he built up the figure of the Perseus to be cast in one jet. The furnace prepared and all in readiness, his ten or more assistants all at hand, the excitable and anxious artist, overcome by fatigue, was prostrated by fever at the critical time. But Cellini's own account of his state at this moment must be read. While writhing upon his bed the message came : " Past earthly remedy your work is ruined." With a scream Benvenuto rushed to the furnace, more oak-wood was thrown in, and a block of tin added to the pot of metal (doubtless the furnace had cooled down, or much tin had evaporated and the remaining metal, more rich in copper, was less fusible in consequence ; it had caked and cooled) ; then with the forced heat the furnace burst, but the metal was partly fused though not enough, more tin was wanting ; in he cast his pewter dishes, plates, and bowls, 200 pieces of his table service ; the plugs were driven in ; the metal ran ! The mould was filling ! was full ! On his knees he praised God, ate a hearty meal with his men, soundly slept away his fever, and Cellini was himself again. Notwithstanding its faults—and what human work is perfect?—the Perseus is a noble statue. It stands on a base, beautifully ornamented but somewhat small, on which is a highly poetical and picturesque bas-relief, representing the rescue of Andromeda by the destroyer of Medusa. It was set up and uncovered to the public gaze in April, 1554, the " admired of all admirers" from the duke in the palazzo Vecchio above to the *facchino* among the crowd filling the piazza. In what a seventh heaven must the vain Cellini have felt himself to be, when thus his work was extolled and its maker flattered ! He received 3550 golden scudi for this work which he himself had valued at 10,000, and believed to be unsurpassed and unsurpassable.

Benvenuto's next bronze work was the grand portrait bust of his friend and patron in Rome, Bindo Altoviti, at whose palace on the Tiber's bank in the piazza near the ponte St. Angelo,

he was hospitably lodged, and where the bust still occupied its original position until the last few years. Afterwards he made models for a small statue of Juno to be executed in bronze, which does not appear to have been cast, for shortly before his death he wrote to Francesco de Medici to whom he bequeathed the model, stating his regret that he had been unable to complete it by reason of his serious illness, against which although baffling his physician he still fought, being seventy years old. He died February 13, 1571.

Francesco Primaticcio (1504-70) was engaged by Francis I. to procure casts from some of the more important antique statues which had then been recently discovered or existed at Rome, to which city he was sent in 1540. These casts were taken by Vignola. He was also commissioned to buy antique sculpture. After his return to France he caused the following to be cast in bronze by able French founders: the Tiber, Laocoon, Cleopatra, Ariadne, Apollo, Venus, Commodus, two Satyrs, two Sphinxes. Of these fine bronzes five only now exist and adorn the gardens of the Tuileries at Paris; they are the Laocoon, Ariadne, Apollo, Venus, and Commodus; the others perished during the many troublous times of France.

The most able sculptor of this later period was Giovanni di Bologna, or perhaps more correctly Gian Boullogne, born about 1524, a native of Douai. After studying under a sculptor named Beuch he, still very young, travelled to Rome where he was noticed and advised by Michel Angelo. Returning homewards he was induced to remain at Florence under the patronage of Bernardo Vecchietta, who, himself an amateur, encouraged and assisted him in bronze casting, &c. Disappointed in the competition for the Florentine fountain Giovanni obtained the commission for that at Bologna, and was occupied upon it more or less during three years; it was completed in 1566. The fountain consists of a marble base, at the lower angles of which are bronze sirens, and between them shell-ornamented basins;



FOUNTAIN AT BOLOGNA.

the second stage has armorial shields of bronze, and shells upon the lower angles ; round the third, which forms a base to the huge bronze figure of Neptune, are four children holding dolphins of bronze, with masks between, and other ornamental details ; the Neptune is nine feet in height, and the effect of the whole is very grand.

His next great work was the fine equestrian statue of Cosimo I. in the piazza, the base of which is adorned with bas-reliefs greatly inferior to the figure above ; this was finished in 1594. He also was engaged with his pupils, Pietro Tacca and Pietro Francavilla (1548-1618), on the bronze equestrian statue of Henri IV. in Paris. In a niche at Or San Michele is a figure of St. Luke, and on the fountain at Petraja a graceful Venus squeezing the water from her hair, bronze statues also by Giovanni.

John of Bologna had many pupils and assistants working in



BRONZE KNOCKER IN S.K.M. NO. 588.-'53.

his studio and at his furnaces, from whence came many charming statuettes and minor ornamental objects. As with the smaller works of Verrocchio, Pollaiuolo, Cellini, and other bronzists, we have no record of each object, yet they carry their own certificate of characteristic style, approximately indicating the hand which modelled them, or at least the studio whence they came. His last great work was the bronze gates of the cathedral at Pisa, replacing those by Bonanno which were destroyed by the fire in 1595. Here his own inferiority and that of sculpture in bas-relief at his time, as compared with works of the two preceding centuries, are made painfully apparent. No religious feeling is to be discovered in these confused but well-executed *rilievi*, the clever casting of which is due to Domenico Portigiani, whose father had a similar share in the production of the Bologna fountain. Domenico worked also at six statues and as many bas-reliefs which Giovanni had modelled for St. Anthony's chapel in S. Marco at Florence. In the Annunziata he had enriched the chapel of the Madonna del Soccorso with some bas-reliefs and a crucifix of bronze. There he was buried after his death in 1608, aged nearly eighty-four.

We have now arrived at that period when the arts were in rapid decline, not from technical and mechanical incapacity



FOUNTAIN

CANDLESTICK ; ITALIAN ; SIXTEENTH CENTURY.

nor timidity of undertaking, for scale increased as art diminished, but from an absence of higher motive, and a consequent degeneration in purity of taste resulting in offensive mannerism.

Meanwhile at Perugia, on the piazza, the bronze statue of pope Julius III., the most important work of Vincenzo Danti of that city, was finished in 1555 and is of considerable merit. By him also is the group over the south portal of the Florentine baptistery, representing the decollation of St. John. Paolo Ponzio Trebatti ("Maître Ponce"), who worked in France with Primaticcio, erected a monument to Alberto Pio, prince of Carpi, which was destroyed, the bronze effigy being now in the Louvre ; where are also statues of André Blondel and Charles de Magny, works by this artist. To him also are ascribed two of the bronze figures of cardinal virtues which were at the angles of Germain Pilon's monument to Henri II. Taddeo Landini was the author of the very elegant "delle Tartarughe" fountain at Rome. Girolamo Lombardo, the son of Antonio di Pietro who was the head of the Ferrarese branch of that family, settled at Recanati (1534-60), near Loreto, where he established a foundry and executed the four bronze doors of the Santa Casa, works of admirable technical execution and great beauty, representing, on panels, scenes from the life of our Saviour in a manner which partakes somewhat of an earlier and superior character. The three pairs of external doors to the church, also of bronze, were designed by Girolamo ; and executed, the central one by his sons ; that on the left by Tiburzio Verzelli ; that on the right, the southern side, by Antonio Calcagni. These works are of wonderful elaboration, somewhat overloaded in wealth of subject and ornament. The statue of the Madonna and Child over the portal, a fine group, is said to be Girolamo's last work. Calcagni also designed and cast the noble seated bronze statue of Sixtus V. which occupies a commanding position on the marble steps leading up to the church. It was made between 1587 and 1589 : the pedestal is enriched with

reliefs and shields of arms; mannered figures of the cardinal virtues, also in bronze, occupying the four corners.

As, at the end of the fifteenth century, Michel Angelo threw new life into the enfeebled art of his contemporaries, a life not endued with that purer spirit which had inspired the earlier masters but with a subjectivity almost unfettered, although in the works of his own hands rendered subservient to an all-pervading idealism; so, at the end of the sixteenth century, Lorenzo Bernini gave an impetus to the flagging energies of the art creations of his time, but in a direction still farther removed from the earnest objective sentiment that had attended the earlier regeneration. Without a shade of Michel Angelo's mighty idealism it travestied his most extreme energy, appealing to the senses, and exciting wonder by *tour-de-force* combined with marvellous command of material. In this respect marble seemed as pliant as wax in Bernini's hand, and its surface as delicate as ivory. Had he lived in an earlier period and under the influence of a Perugino or a Donatello, what noble work might he not have done! As the shade of Sansavino pervades the very atmosphere of Venice, predicting the coming fall of plastic art, so in Rome Bernini clouds the sky, crossing one's path at every turn in the form of extravagant architecture or sculpture gone wild. In France he developed the "style Louis quatorze" and its sequent incongruities, which more or less pervaded the whole of Europe, gradually refining at last into the more elegant manner of the period of Louis XVI. This again was chilled to death by the cold pseudo-classic style of the "empire," emanating from the schools of David and Canova. Lorenzo Bernini was of a Neapolitan family. Born in 1598, he lived to the good old age of eighty-two.

One of Bernini's earlier and better works is the Apollo and Daphne group in the Borghese villa, which was chiselled by him when only in his eighteenth year. A bronze reduction from this wonderfully elaborated marble, probably executed under his own

supervision, was sold in London a few years since, and is now in the possession of Mr. H. Danby Seymour. Bronze was, however, comparatively but little used in sculpture by Bernini or the artists of this later time; we must except his *baldacchino* which surmounts the high altar in St. Peter's, with twisted and fluted pillars entwined with gilded vine-stems and supporting the huge canopy, all of bronze richly picked out with gold. This is not merely an architectural work, being adorned with figures of angels, cherubs, &c. The portrait busts by Bernini are, however, fine, although the drapery is generally in a false style. He had many followers, by one of whom is the bronze bust of pope Alexander VIII. (No. 1089.-'53.) in the South Kensington collection: others were Alessandro Algardi, by whose hand is the fine bust at South Kensington (No. 1088.-'53); Francesco Mocchi, and Horatio Albrizio.



LAMP STAND; ITALIAN; SIXTEENTH CENTURY.

We must not omit referring to the huge statue of S. Carlo Borromeo, overlooking the Lago Maggiore from the heights above Arona. The head, which will hold three persons, and the feet and hands are of cast bronze; the figure is a core of masonry, covered with beaten copper plates. It was set up in 1697, and is not without considerable merit.

The angel in gilt bronze on the top of the castle of St. Angelo at Rome was the work of Giardoni, a bronzist of the last century.

Bronze sculpture in Italy was, however, but little encouraged during the last century, except in the production of ornamental objects and statuettes copied for the most part from the antique. Giovanni Zoffoli, of Florence, was one of the most able of these bronzists: his vases and statuettes, frequently signed in full or with the initials G. Z. F., are well executed. F. Rhighetti was also an excellent bronzist, working at Rome, during the last quarter of the century: as was also G. Boschi. Canova (1757–1822), the leading spirit of the art of his day, produced nothing in bronze; nor has its use since risen above mediocrity.

Among more recent works may be mentioned the monument in bronze to the emperor Francis, which is so prominent an object in the court of the Burghof at Vienna. It is an able work by Marchesi of Milan, and was erected in 1846.

CHAPTER VII.

BRONZE SCULPTURE IN GERMANY.

THE fierce tribes of Germany who had so well fought for their Fatherland in forest and on rugged mountain-side against the steady advance of Rome's all-conquering legions were equally antagonistic to the progress of Christianity. The altars and sacred groves of their mythological deities were defended to the death that might open to those wild warriors the golden gates of their Walhalla, where the welcoming nectar draught from the mystic horn would refresh their weariness, and soothe them into bliss.

The eighth century had, however, seen Christianity increase, except in remote regions ; and as the Roman armies had advanced, intrenching themselves at every point of vantage, so the missionary of Christ, armed with the sacred message beneath the banner of the cross, steadily progressed and took possession of each converted district by the building of a church and its surrounding monastic establishment. Notwithstanding a period of discord these fortresses of the new faith increased in numbers, as in riches : for the same romantic devotional sentiment that had influenced the minds of the fierce but simple people to the adoration of Odin was now directed to the true God and to those who had made Him known. Wealth gradually flowed in, and it is not a little remarkable that its use should have been applied to the production of large works in metal at a very early

period in Germany. The bronze gates that adorn some of her churches are of even earlier date than those produced in southern Italy; not, however, as we believe, from any superior artistic power or facility of handicraft but rather perhaps from local circumstances, directed by a comprehensive judgment on the part of the clergy and applied under extraneous influence. Thus it is reasonable to suppose that the materials for making bronze, or that alloy itself, would be among the more abundant offerings of such a people, either in the rough form or perhaps as weapons which had been successfully used in the foray or the chase and offered as *ex votos* to the shrine. Hence the material; while the many forests would afford a ready supply of fuel requisite for larger operations of the foundry.

But as regards the invention and the modelling of such works, these came, as we believe, not only from the teaching but, in the majority of instances, were the frequent contribution of foreigners, who may have been among those numerous artistic brothers of the monastery, to whom the arts in the Church owe so much of their historic renown. Doubtless these would be materially influenced by various surroundings; and the original Byzantine mode of treatment would, to a greater or less extent, be modified, resulting in that peculiarity of representation observable on the early German gates of bronze, in which some learned critics have discerned a native and original romantic element. Looking at them in a German atmosphere, though not with German eyes, we confess we cannot discern other than a modified Byzantine treatment and manipulation, influenced to the extent of a variety by local circumstances and impressions. To this root later works may well be traced, some of which are known to us as "Rhenish-byzantine" and "Byzantine-romanesque."

At Aix-la-Chapelle we find in the cathedral bronze work of the Carolingian period, in which classic ornamentation is apparent. The bronze pine-cone or artichoke may be of the tenth century, but the lion-headed door handles, surrounded

by a palmette bordering in classic taste, remind one of the Etruscan manner. These are probably Carlovingian and free from Byzantine influence, as are some bronze gratings in the interior of the church. At Cologne are doors with classic mouldings and lions' heads in similar style. At Brunswick is the bronze lion, a Byzantine work of the eleventh century, said to have been brought from Constantinople but by other authorities ascribed to German artists of the twelfth. A cast of this is in the South Kensington museum (No. '73.-383.). We learn that about the year 990 the bishop of Verden in Saxony gave six brazen columns to the abbey church at Corvey, and other six were subsequently executed by an artist named Gottfried.

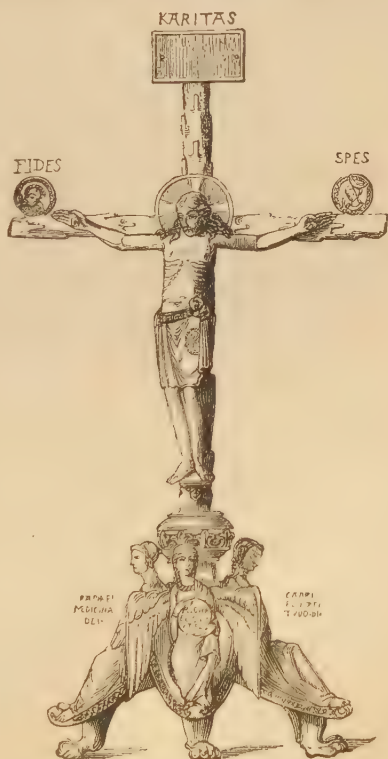
It would seem that the Germans were clever in the casting of bronze, an art that is referred to in the work of Theophilus. Accordingly we find in the churches of many parts of Germany important monuments in this material. We can name here one or two only, referring for more detail to the introduction to the large catalogue.

At Hildesheim bishop Bernward caused a bronze gate to be cast for the cathedral. It was finished in A.D. 1015, and is still the great gate of that church. By German critics it would seem to be considered as a work of native and not of Byzantine production, the rude modelling being rather influenced by a Romanesque or debased classic style. A brazen column was also made for the church of S. Michael, in 1022, by the orders of the same bishop; it now stands in the cathedral Platz, and is some 15 ft. in height although wanting the capital and surmounting crucifix. At Hildesheim also are the magnificent coronæ of the second half of the same century; another is at Aix-la-Chapelle. Copies of the Hildesheim doors, brazen column, corona, and of the Augsburg doors are in the South Kensington museum. Augsburg cathedral has bronze doors cast with subjects in *rilievo* on separate panels, but which are supposed to have been made up from two distinct works; the subjects of the panels are in duplicate.

Following the history of its development in the north and western parts of Germany to the low countries we find that the twelfth century saw a considerable increase in the amount and in the direction of artistic work, both in bronze and in stone. Flanders even early in the century had made a great advance in the production of metal work, and Dinant became the centre of the industry. The churches of Sta. Sophia at Novgorod and the cathedral at Gnesen have bronze gates; both are believed to be the work of Saxon casters. The plain panelled doors of Mayence cathedral, with lion's head handles, are of the twelfth century—

1135. The tomb of Rudolph of Swabia in the cathedral of Merseberg is of the later years of the eleventh or an early work of the twelfth century. It is a slab representing Rudolph in bas-relief, richly clad in a dress enriched with gems and with engraving. At Halberstadt is an episcopal slab monument in the church of our Lady, and another is in the cathedral at Magdeburg, in memory of the bishop Frederick I. who died in 1152.

This century was even more distinguished by the production of reliquaries, crucifixes, monstrances, and other church furniture in gilt bronze, as well as in the



BRONZE CRUCIFIX : GERMAN.

precious metals; the Rhenish and central towns and artists being perhaps the most abundant sources. Many of these have survived to our days and are preserved, some in the sacristies of churches, others in museums and private collections.

There is but little doubt that the incised monumental slabs generally known as "brasses," and which are more numerous in England than elsewhere, had their origin in northern Germany or Flanders, more probably in the former country. Perhaps the earliest now existing is in the church of St. Andrew at Verden, to bishop Tso. von Welpe, 1231. At Hildesheim is one to bishop Otho of 1279. In early German examples (fourteenth century) the figure is left in a sort of flat relief by the excision of the surrounding field, the details being finished by engraving, as on that at Brunswick to John de Rintelen, 1376. At a later period (fifteenth century) the face is sometimes represented in low relief, as in that to bishop Peter at Breslau, 1456. This method would again lead to the modelling of the entire figure in low or full *rilievo*, of which there are examples at Bamberg, Marberg, Cracow, &c.

The thirteenth century brought with it a development of the plastic arts hand in hand with architecture, which no preceding period had known since the decline of classic sculpture. This sentiment, inspired by deep religious feeling, created for itself a new expression in the wide acceptance of gothic or pointed architecture. There were, moreover, a purity and grace in the varied productions of the thirteenth century, and an objective and elevated tone curiously analogous to, although widely divided from, that which prevailed about the period of Pericles; analogous also, but much nearer, to the earlier productions of the *renaissance* in Italy. Architecture, sculpture, and painting (in polychrome), particularly in the employment of coloured glass for windows, went hand in hand as loving sisters and fellow-labourers in the one object—the harmonious completion of buildings and ceremonial ornaments devoted to the glory of God.

While sculpture developed to a remarkable extent in this direction in France, a more independent, homely, and naturalistic feeling, combined with Romanesque treatment, still prevailed for the most part in Germany: producing works frequently rude in conception although not without occasional grandeur and beauty. The bronze font in Würzburg cathedral is the work of Master Eckard, of Worms, cast about 1279: it is in the Gothic manner, having scenes from the life of Christ in eight divisions, executed with more care than artistic merit. Some admirable reliquaries and other



CENSER; TWELFTH CENTURY.

church objects, with figures of the apostles, &c. in copper or bronze gilt, as well as candelabra, ewers, &c. were made during this century; among them are the shrine of the Virgin in the cathedral of Aix-la-Chapelle, others at Tournay, &c.

Hardly so satisfactory, because not so pure, the sculpture of the fourteenth century becomes still more florid in ornament, and although of excellent technical execution is wanting in originality of invention and in the expression of high feeling; a greater tendency also to a naturalistic treatment gained ground and grew into a conventional mannerism. At Nuremberg some of the most important works of German sculpture were produced in stone during the fourteenth century, enriching the noble churches

of that interesting old city. At Augsburg, Cologne, &c. are others. The carved wooden altar *retables* of this and the next



EWER OF BRASS ; GERMAN ; TWELFTH CENTURY.

century are also important. Meanwhile some of the metal work was of great beauty, although the larger works in bronze do not equal the excellence of the stone sculpture of their time in Germany. At Prague is the interesting equestrian statue of St. George, executed in 1373 by Martin and George von Clussenbach by order of the emperor Charles IV. It is a most vigorous and admirable model, conceived with great spirit and displaying much knowledge and observation of nature. Although nearly two-thirds of the size of life the details are finished with great care, and altogether it is one of the most remarkable works in bronze of the fourteenth century. (A cast is at South Kensington, No. '64.-113.) In Cologne cathedral is the noble bronze tomb of Conrad von Hochstaden, the archbishop, who

died in 1261, but the monument was not erected till the following century, probably after 1322. The figure exhibits great dignity and solemn repose.

We have seen how comparatively rare was the use of bronze for monumental sculpture in Germany, and this was also the case in France during the thirteenth and fourteenth centuries. In stone the northern artists had made considerable executive progress, but no higher advance in the creative spirit had become apparent. Meanwhile Italian sculptors had left the rest of the world's art still bound in the architectural fetters of the "Gothic" manner which confined the growing naturalistic spirit of the age. In the north that beautiful architecture still prevailed, and sculpture dared not encourage her longing after greater freedom. In Italy the dormant classic taste gladly welcomed a revival of antique architectonic forms; and sculpture also freed herself from those restrictions which the pointed style, never strictly adopted in its purity but more or less varied under Italian hands, had only lightly imposed. The gothic was an exotic of the north which, beautifully modified by the Italian soil and clime, became a very lovely but erratic variety, soon to fade away before the revived cultivation of an indigenous manner. There is nevertheless a wondrous charm in the delicate propriety, the grace, and earnest truthfulness displayed in some northern sculptures of the gothic period; but at its decline that art shows us the spirit of revolution and unrest, without attaining to a fixedness and dignity of character or beauty of expression. Subsequently, in the latter half of the fifteenth century, a strongly picturesque dramatic rendering of sacred subjects is manifested in the curious carved and coloured wooden altar-pieces, &c. some of which may be referred to at South Kensington (Nos. 5894.-'59, 192.-66, 2418.-'56).

But we cannot here enter upon the interesting and, in England, the little known subject of these remarkable wood carvings and their authors, among which are some works of extraordinary

beauty, as also many of exaggerated and offensive action and detail; we allude to them as occupying in German plastic art the place which in Italy was filled by sculpture in marble and in bronze.

We may say that during the earlier half of the fifteenth century monumental works were, for the most part, in stone and generally coloured, as were the wooden altars. Tomb slabs in bronze are of much less frequent occurrence and inferior in execution; of such are some in the cathedral at Bamberg and elsewhere. The majority are in memory of church dignitaries; and, dating from 1414 through the second half of the century, may be more correctly classed among "brasses;" the effigies being sometimes engraved or cast in outline; sometimes in very low relief.

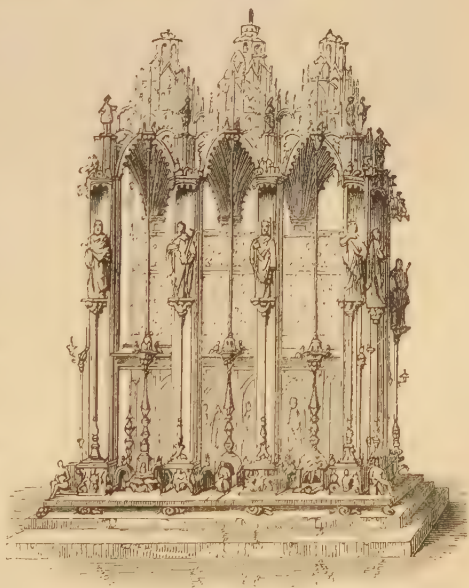


FIGURE OF PETER VISCHER;
FROM SHRINE OF ST. SEBALD,
NUREMBERG.

The larger number of these works in bronze were executed by the notable artists and modellers of Nuremberg, first and foremost among whom was the renowned Peter Vischer, on the subject of whose productions an important illustrated work is now being published by Dr. Lübke. Peter was a native of Nuremberg, the son of a brass caster, Herman Vischer, who had made the font at Wittenberg in 1457. The greater part of Peter Vischer's life seems to have been spent at Nuremberg, where he was assisted at his foundry by five sons. Peter Vischer was, however, not merely a bronze caster; he was an artist of profound thought and great inventive capacity; qualities which become manifest throughout his otherwise naturalistic and eminently Teutonic rendering of

the subjects he so ably treated. The gothic form and ornamentation, mingled with *renaissance* details which pervade nearly all his works afford a striking instance—paralleled under a different sentiment by the sculptors of Italy in the earlier years of the fifteenth century—of what may be done without, on the one hand, offending the restrictive exigencies of pointed architecture by an over freedom of gesture ; while, on the other, a rigid mannerism gives place to a natural and dignified representation of the figure or subject.

Taking a few of his works in the sequence of their production, we begin with the monument to archbishop Ernst, in Magdeburg cathedral, executed in 1495 ; and that to bishop Johann at Breslau, in 1496, in which he already shows an independence of the rigid models of the earlier school. His next recorded work, after an interval of some ten years, displays a still greater advance in freedom from the old manner, and is in every respect a noble monument of artistic skill. This is the well-known shrine of St. Sebald at Nuremberg, a labour of love, which occupied him from 1508 to 1519. A cast of this grand work is in the South Kensington museum (No.'69.—14). It may be regarded as representative of the perfection of German sculpture in bronze at the dawn of the



SHRINE OF ST. SEBALD, NUREMBERG.

sixteenth century ; and in this respect should be studied and compared with the same art in Italy, not indeed at the same period but of some half century before ; and again, as an example of the higher realistic school contrasted with the ideal of the great Italian masters. Admirable as the works of Vischer may be, we cannot but feel that they are by such comparison found wanting in that high feeling for the beautiful which pervaded the art of Ghiberti, while they are as far removed from the

objective sentiment and the heart-stirring power of Donatello. Nevertheless they engage attention by the simple rendering of the stories represented, and the charm of truthfulness that is infused throughout the whole work. The figures of the apostles are not without considerable dignity and a depth of expression which raises them above the realistic ; but in the nude figures of the children his modelling is far from excellent, although the play of fancy in the groups has great beauty. The architectural and other ornamentation are admirable, as is the painstaking execution of every detail.



FIGURE FROM FOUNTAIN, NUREMBERG,
BY LABENWOLF.

Pankraz Labenwolf was a pupil of the Vischer school, who made about

1550 the fountain in the market at Nuremberg, surmounted by the figure of a peasant holding a goose under each arm, whence flows the water.

At Aschaffenburg is the monument to cardinal Albrecht von Brandenburg, of the year 1525, on which the figure of the cardinal is represented in relief of life size. This is a noble work of high artistic quality. At Wittenberg, in the castle chapel, is the fine monument to the elector Frederic the wise; also a figure in *rilievo* of excellent art dated 1527, by some supposed to have been executed by his son Peter, after the master's design. Two fine bronzes, inkstands, in the writer's possession are interesting as small objects by a great master; they are varied embodiments of the same idea, which is conveyed by a label bearing the inscription, VITAM . NON . MORTEM . RECOGITA. A nude female figure (Truth?) is standing at the side of a vase on which her left hand rests, her right pointing upwards; a skull is on the ground (in one model she thrusts it behind with her foot), also a shield and sword or mace; the position of the figures, the form of the vase, and the details, are varied upon each bronze. Upon one the inscription (which is cast in relief) has the initials P. V., and between them the emblem of two fish transfixed upon a spear; beneath the base is the date 1525: on the other the emblem of two fish on a spear is four times repeated among the ornaments upon the vase.

Perhaps the most imposing bronze monument in the world is that to the emperor Maximilian in the palace church at Innsbruck, the idea of which was conceived and partly planned during his life. As it now remains, a lofty marble sarcophagus on which is the kneeling bronze figure of the emperor in prayer—a work of great beauty that has been ascribed to an Italian artist, Lodovico Scalza of Milan—is enriched with sculptured bas-reliefs, and enclosed with an elaborate *grille* occupying the centre of the church; while standing, as on guard and ranged in a row on either side, are statues, about eight feet high, of twenty-eight

historical personages or relatives of the imperial house. About one half of the existing statues are ascribed to the court painter Gilg, including a model for that of the emperor. In addition to these larger statues twenty-three of half-life size are now in the silver chapel, never having been properly arranged in regard to the monument. Some of these figures are works of considerable excellence, those ascribed to Vischer being by far the best ; others, again, are rigid and without movement : for the most part the casting and elaboration of details are more admirable than the modelling, but the effect of the whole, particularly when seen in the waning light of evening, is very imposing and solemn.

Bronze work of the sixteenth century is less abundant in other parts of Germany ; we must not, however, overlook the city of Lübeck, where, in the Marienkirche, is a bronze font of the fourteenth century, and where others exist of later date. That in the Egidien Kirche of 1454 is a simple bronze basin on stone lions. One of gothic character is in the cathedral, by Laurens Groven in 1455, with statuettes in arched recesses. Other fonts of bronze are in churches, as one at Steudal, of 1474, in the Marienkirche ; another of 1520, and a lattice-work at Salzwedel by Hans von Köln ; at Emmerich is another, supported by sirens. At Erfurt, in the cathedral, are numerous monumental slabs commemorating canons and other dignitaries ; these are mostly engraved and rather to be classed among brasses, some only of more recent date being in relief. In the latter half of the sixteenth century German sculpture in bronze is less abundant and remarkable, and becomes more and more subjected to the influence of the followers of Michel Angelo. Some grand works were nevertheless executed at Nuremberg and elsewhere.

In northern Germany the use of bronze memorial slabs was still, though not abundantly, continued ; several of them may have emanated from the Nuremberg foundries. Of such probably

are those at Coburg. A bronze tablet to Christina landgravine of Hessen (died 1549) is at Cassel, in the church of St. Martin. One is in the cathedral at Magdeburg, to Ludwig von Lochow (died 1616); and again another to Cuno, who died in 1623, with his portrait, and the subject of the Entombment treated in a highly finished but *baroque* style.

During the latter half of the seventeenth and the earlier years of the eighteenth centuries works of sculpture in bronze were but rarely executed in Germany; the thirty years' war too much engrossed the attention of all classes. Notwithstanding, some excellent artists of the Flemish, Netherland, and Dutch schools worked at Berlin and elsewhere. In 1697 Andreas Schluter a native of Hamburg, who had studied his art in the low countries, modelled the statue of the elector Frederick III. which was cast by Jakobi and erected in Königsberg. He afterwards modelled the equestrian statue to the Great Elector which is on the bridge at Berlin; this also was cast by Jakobi in 1700 and erected in 1703, and is a work of the highest excellence. At the angles of the pedestal, which is panelled with bas-reliefs, are figures of captives in their chains. At Vienna George Raphael Donner (1692-1741) modelled figures of the rivers of Austria, and of Providence, which were cast in lead and now adorn the fountain in the new market-place of that city.

As the *barocco* of Louis XIV. had guided taste in Germany previous to the great revolution, so the cold pseudo-classical style of the republic and the empire afterwards spread its chilling influence, aided by the example of Canova and of David. From the extravagance of the former manner artists were led by archaeological teaching, and by studying the then recently discovered monuments of Grecian art, to adopt a method which was but a petrification of their characteristics or a lifeless reproduction of their forms. The genius of Flaxman and yet more that of Thorwaldsen (whose most important work in bronze is the eques-

trian statue of the elector Maximilian I. at Munich) barely succeeded in rescuing the plastic art of their respective countries and of Germany from this scholastic rigidity, while France and Italy resigned themselves to the trammels of their own newly-created manner. A more naturalistic and healthy sentiment has since everywhere prevailed.

In Germany Schadow (1764-1850) executed works of independent character, for the most part or all in marble, some of which have since been reproduced in bronze. Christian Rauch, also of Berlin, made some portrait statues in bronze, of which one to Blücher designed by Schadow is at Breslau and was finished in 1820. Another in the same material is at Berlin, executed in 1826, with bas-reliefs upon the base. But his most important work is the grand equestrian statue of Frederick the great (1839-1851) with its richly adorned pedestal, so conspicuous an object at Berlin; of which there is a reduced copy in the South Kensington museum (No. 976.-'72). Friedrich Drake, Rauch's pupil, ably followed his master's manner.

A notable but somewhat exaggerated bronze work by A. Wolff is on the staircase of the Berlin museum, a mounted youth attacked by a lion; it forms a corresponding group to the amazon by August Kiss, and is of greater merit. This artist has produced many important works in bronze, among which we may note the equestrian monuments to Frederick William III. at Königsberg and Breslau. His more generally known groups are those of St. Michael and of St. George and the dragon; works of amazing power somewhat overstrained.

Ludwig Schwanthaler (1802-48), the leader of the Munich school, worked chiefly at that city after completing his studies in Italy. He has produced many works in bronze; the colossal figure of Bavaria, 54 feet high, being very remarkable for its size. Of Schwanthaler's school are some bronze statues in Munich in questionable taste, such as those in the Maximilian Strasse and that

of the elector Max Emmanuel on the promenade. An equestrian statue to king Ludwig is by another hand, that of Widmann. More recent and of more importance are the bronze doors for the Capitol at Washington, cast by F. V. Müller of Munich after designs by Randolph Rogers.

CHAPTER VIII.

BRONZE SCULPTURE IN FRANCE.

AFTER the long-continued occupation of Gaul by the Romans, an occupation that left a much stronger impress upon the arts and habits of the people than that produced in Germany or England, a period intervenes, of the productions of which we have but few characteristic remains. The Franks and Gauls during those troubled centuries were still influenced by reminiscences of the classic manner, occasionally but slightly intermingled with that of the Byzantines. Not indeed until the Merovingian age do we find any distinct style of metal working supervening upon the debased Roman, which, for the sake of distinction, is usually classed as "Gallo-roman."

In Merovingian works both of bronze and of the precious metals we find a divergence from classic models and a method of ornamentation of somewhat oriental taste, in personal ornaments, &c.: combining the Celtic filigree interlacings with Teutonic forms and an enrichment by means of coloured glass or stones, separated by *cloisons* or thin walls of the metal, somewhat like the antique Egyptian and the Byzantine. Again, the gold, silver, and gilded bronze fibulæ and other ornaments for dress, weapons, &c., discovered in France approach so closely to the character of those found in the Saxon graves of England, in the Lombardic sepulchres of Italy, and in Spain, that it is difficult to draw

a line of difference between the productions of these several peoples.

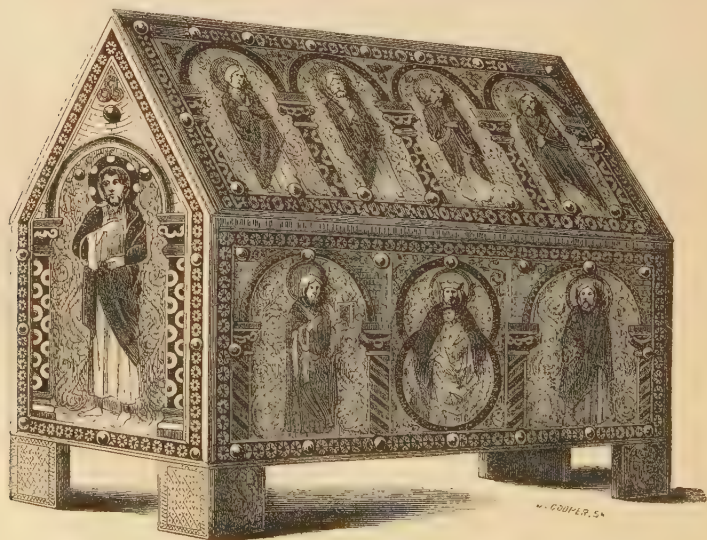
The use of enamel on bronze has been already alluded to in reference to the works in that alloy of the later Celtic period in Britain ; and objects of similar ornamentation, which would seem to have had a northern origin, are also found in Gaul and in Germany. The Merovingian and Saxon manner is more distinctly *cloisonné*, and effected by the insertion of slices cut from rods of red or many coloured glass or stones, rather than by the fusion of the powdered enamel.

Bronze however being our proper subject we must resist the being detained by an inquiry into the process of enamel enrichment of the metal. The art of enamelling in France gathered its forces together in the great centre at Limoges, a place already celebrated for its metal workers even in classic times, and where they continued to flourish under the master hand of Abbon followed by his more celebrated pupil Eloy. Received into court favour, and afterwards created bishop, the latter admirable artist still continued to practise the work he so much loved, and established at Solignac, in A.D. 631, a monastery for artistic monks which became a school of ecclesiastical metal work. The gilt bronze chair preserved at Paris, and known as that of Dagobert, has been ascribed from early time to Eligius or Eloy, the patron of the craft in France ; but (the history given by S. Ouen notwithstanding) it is possibly more ancient, or at most a copy of a Roman curule chair to which additions and alterations have been made ; perhaps by Suger (who refers to it as the work of Eloy) in the twelfth century. A cast of it is in the South Kensington museum (No. '68.-16).

The Carlovingian still retained the forms of debased Roman art, as may be seen in the bronze *grilles*, the lion-mask door, rings, &c., at the cathedral of Aix-la-Chapelle ; but the goldsmith's work upon Charlemagne's sword and crown, though rude in modelling, partakes of a Byzantine character ; and other metal-

work of the period would seem to exhibit rather a barbaric display of rich material than originality in design or masterly execution. The Byzantine manner is strongly marked in all the earlier productions of Limoges. Meanwhile, in France, sculpture was applied to ivory and to stone rather than to metal, and larger castings in bronze are almost unknown.

Suger, abbot of St. Denis, was the leading spirit of art during the early half of the twelfth century. He rebuilt the abbey of St. Denis, and is said to have introduced bronze-casting (probably by the immigration of Byzantine artists), causing to be cast for it about 1140 the first pair of gilt bronze doors that had been produced in France. They were enriched with *reliefs* representing the history of the Passion, the Resurrection, and the Ascension. These still existed in 1706. Suger was also a great restorer, and in so doing probably injured many previously existing works; for example, he regilded and re-enamelled the candelabra given to the abbey by Charlemagne, and the eagle at that time in the choir.



ENAMELLED CHASSE IN BRITISH MUSEUM.



ENAMEL OF GEOFFREY PLANTAGENET.—(See next page.)

velopment of this purely northern and eminently graceful style all the sister arts speedily complied, although occasionally, as in the case of sculpture, not without certain restrictions and adaptations to which they were obliged to accommodate themselves. These, it is true, had previously existed : the sculpture that had enriched the earlier rounded and traditional architecture having been equally "cabined, cribbed, confined" by the spaces allotted to such works, and the constrained requirements of architectural rule. A somewhat archaic rigidity of form and figure was the consequence, which nevertheless harmonised perfectly with its surroundings and together formed an admirable whole. But in the course of the thirteenth century we find a rapid development encouraged under the influence of S. Louis, and a tendency on the part of sculpture to emancipate herself from such architectural trammels by an effort at more energetic action and varied disposal of the drapery. After passing through a golden age of mediæval excellence, unequalled by anything since the most perfect period of Greek art, this wonderful style (an admirable material expression of Christian thought and sentiment) degenerated into affected mannerism.

Beautiful ironwork was executed, but little of the bronze sculpture, which in larger works was rare as compared to that in stone and wood, remains. The shrine of S. Taurinus in the cathedral of Evreux is an example of metal-work of the thirteenth century ; and various reliquaries and church vessels, &c., in silver and gilded copper still survive to prove the excellence of the goldsmith's skill at that period. The tombs of Everard de Fouillois (died 1222) and Geoffrey d'Eu (died 1236), bishops of Amiens, in that cathedral are splendid works ; each figure is cast in high relief upon a slab which is supported at the angles and sides by six lions ; a gracefully-decorated niche is above the head, and small figures of angels holding censers are at the sides. These works appear to have been cast, and differ materially from the manner of those worked by the artists of Limoges,

who adhered to the method of affixing beaten plates upon a wooden core.

Perhaps the latest of the Limoges tombs still preserved to France is that in the Louvre, the recumbent effigy of Blanche de Champagne (1283) wife of John I. duke of Brittany. It is of beaten and gilt copper plates upon an oaken core, the pillow, &c., enamelled; the head is *repoussé*. The tomb of Walter de Merton bishop of Rochester (1277) was by "Johannes Limovicensis." The tomb of William de Valence in Westminster abbey is also supposed to be by a French worker of this century (1296).

At that period a strong artistic feeling prevailed among all classes and was exhibited on secular vessels as much as on the objects for church use. Grotesque figures of animals and imaginary creatures were contorted into the form, or decorated the spouts and handles, of jugs and drinking vessels. Especially beautiful was the sculpture in ivory, a material in which that art may be traced and studied almost in unbroken series from a very remote date. The brilliant artistic period of the thirteenth and early fourteenth century in France was succeeded by one of war and internal trouble. Works were not only less numerous but of less excellence, and sculpture in so valuable a material as bronze was comparatively rare. The purer Christian art had faded away, and an interval of small activity was replaced by the current of the revival which, encouraged by Charles VIII., Louis XIII., and their courts, flowed in from Italy. The influence of Flemish taste continued to hold its sway during the fifteenth century; but there were only few examples of larger undertakings in solid metal. Out of the enormous wealth in precious and artistic objects, which once so richly adorned the great churches and conventual establishments of France, very little remains; the iconoclastic spirit of religious reformers and the greed of political revolutionists having encouraged spoliation of what war had spared.

Admirable as had been the development of French sculpture

in stone and in ivory during the thirteenth and earlier years of the fourteenth centuries her native artists were but weak during the fifteenth ; Flemish influence continued its power, mingling with the stream of Italian *renaissance*. The new style became fully established through the encouragement given to Italian artists by Francis I. in the course of the sixteenth century. Sculpture, moreover, was not so abundant in the fifteenth as it had been previously and works in bronze were few. Excellent woodwork was produced, as choir-stalls, &c., and monumental sculpture was chiefly in marble. In the following century the influence of Cellini upon Jean Goujon, the leading French sculptor of that period, is distinctly shown in the marble group of Diana with the stag, by the latter artist, which is preserved in the Louvre. Germain Pilon, on the other hand, was a follower of Primaticcio's manner.

We must, however, confine ourselves to bronzes; yet not all of these are by native sculptors, although the admirable castings executed by French founders under the supervision of Primaticcio are worthy of all praise. By Germain Pilon are a bronze *rilievo* representing the dead Saviour mourned by His disciples, and a kneeling figure of René Biraque ; both in the Louvre. Barthélemy Prieur executed the fine bronze figures of Peace, Abundance, and Justice, now in the same museum, which once formed part of the tomb of the Montmorency.

From this period we find that France takes an important place in the production of artistic works in bronze, but the influence of the Italian school continues to be felt although modified by a French manner : and we must, through want of space, again refer the reader to the introduction to the large catalogue for a detailed notice of the chief French bronzists since 1600, and of their works. We would, nevertheless, not omit to notice that we owe our finest equestrian statue, the Charles I. at Charing Cross, to Hubert Le Soeur, a Huguenot refugee who died in England in 1652.

We regret that the South Kensington museum is not richer in

the admirable ornamental bronze work, both gilded and dark, which was produced in France so abundantly during the reigns of Louis XIV., XV., and XVI. We allude particularly to the clock cases, furniture mountings, candelabra and candlesticks, mountings to vases of marble, &c., of which so large and so choice a selection is possessed by Sir Richard Wallace and lately liberally exhibited at Bethnal Green. The royal collection at Windsor is very rich in similar furniture bronzes, and in groups and statuettes of bronze, both Italian and French. In the Louvre are some fine examples, removed from St. Cloud and other royal residences. The excellent modelling and the perfected technical manipulation of many of these works render them examples for the study of the practical bronzist. Good indeed also are some copies of these productions, the work of able French metallists of our own day, and few, if any, superior to those executed in London by Mr. Hatfield, whose ability as a caster and chaser has descended to his nephew. Many of these works have since passed for original, although far from the intention of those by whom and for whom they were made. The Barker collection, lately dispersed, contained excellent examples of these modern copies, the work, for the most part, of a French hand, now no more. Among those who produced the originals may be mentioned André Charles Boule, or Boulle (1642-1732), and his pupil Philippe Caffieri, a "*fondeur et ciseleur*;" the metal work on whose cabinets is as important as the inlaying. The gilt bronze work of Martincourt and of Gouthière (born 1740), his admirable pupil, was never surpassed. Gouthière's name but rarely occurs on his works; one fine example, a clock case, is in Sir R. Wallace's collection, signed "*Gouthière, Ciseleur et Doreur du Roi, à Paris, Quai Pélletier, à la Boucle d'or, 1771.*" His work sometimes occurs in connection with models by Clodion, &c., and with furniture by David and Riesener, executed for Louis XVI. and his court.

The pseudo-classic manner under the influence of the school of David and Chaudet, which rose upon the ashes of the exag-

gerated but vigorous art of the old *régime*, had nevertheless dexterous hands to execute what its followers designed. Modelled by the latter artist, cast by Cheret, is a seated figure of Peace, life size and of cast silver, dated 1806, now in the Louvre. The badly-cast reliefs on the column of the place Vendôme were modelled by Joseph Bosio (1769-1845) as was the quadriga, surmounting the triumphal arch of the place Carrousel. Perhaps the most able but sensuous sculptor of his time was Jaques Pradier, a native of Geneva (1790-1852), many of whose works have an extraordinary charm but do not appeal to the higher mental or religious sentiments.

Among the more important bronze works executed in Paris within the present century are the gates to the church of the Madeleine, cast after the models of the late baron de Triqueti by Eck and Durand. Their size rather than their excellence of art is remarkable. A striking and energetic work is the equestrian bronze statue of Richard Cœur de Lion in Old Palace yard, Westminster, not however faultless in its action or proportions. This also was the work of baron Charles Marochetti, R.A.; of French parentage but born at Turin, in 1805; nurtured at Paris, schooled at Rome, he worked in his native city, at Paris, and in England, where this group was produced in 1851. His equestrian statues of Wellington, the one at Strathfieldsaye and the other at Glasgow, were executed in Paris. The statue to Lord Clyde in Waterloo Place was his last work. He died in 1867.

CHAPTER IX.

BRONZE SCULPTURE IN FLANDERS, THE NETHERLANDS, AND SPAIN.

IN Flanders and the Low Countries an early and remarkable development of commercial and productive industry led to an equal activity in the various branches of metal work. The great centre of this industry as applied to the manufacture of bronze and latten was at Dinant, where large quantities of *grosserie* (objects in that material for ordinary use) were produced, and whence many able workers emigrated to Germany and France.

Among the more important and early works yet preserved is a curious brass font in the church of St. Bartholomew at Liège. Upon this the subjects in *rilievo* are executed with considerable artistic power, while the artist's name and residence and the date are recorded by inscriptions: Lambert Patros, of Dinant, 1112. In the museum at the porte de Hal in Brussels is another, having figures in relief representing the baptism of Christ, &c., and uncial inscriptions, with the date, 1149, and the place of production, Dionante (Dinant). Another, supported on four figures, is in the hôtel Cluny at Paris. Sculpture in bronze was, however, but little used. The noble shrines of the Virgin, of 1214, and that of St. Eleutherius, of 1267, in the cathedral of Tournay, were works rather of the goldsmith's than the bronzist's art.

Abundant as was stone sculpture in the thirteenth and four-

teenth centuries, little, comparatively, seems to have been executed in bronze. There is no doubt that the material for all the earlier monumental brasses so ably incised by English hands was imported from the Low Countries and from Cologne ; although subsequently of native manufacture. In France after the decline of the admirable native school of sculpture which prevailed till nearly the middle of the fourteenth century Flemish influence (as we already observed) became manifest, and retained its power until absorbed into the revival which supervened from Italy. Carving in ivory was cultivated with great success in Flanders, and excellent woodwork was executed ; ironwork also attained there to the highest excellence.

Although monumental sculpture in bronze during the fourteenth and fifteenth centuries was comparatively weak, the use of incised brasses for sepulchral slabs was much adopted. Some of these indeed may almost be classed as sculpture, the effigy of the deceased being executed in very low relief. Painting was the more ascendant art : works by such masters as the Van Eycks and Memling declaring to what a degree of excellence it had attained.

Among the more important Flemish brasses that have been preserved to our days are those in memory of Guillaume de Wenemaer and his wife Marguerite Brunen, of about 1325, in the cathedral at Ghent ; of later date are those in Notre Dame at Bruges, of 1575 and 1581. Some brasses of Flemish workmanship occur in English churches, as that of 1349 at St. Margaret's, Lynn, in Norfolk ; one of 1361 at Newark, in Notts ; and fragments of others which have been reworked by English artists on the reverse side (palimpsest brasses), as those in Mawgan church, Cornwall.

At Tongres is a brass eagle and stand, the work of "Johannes des Joses de Dyonants" 1360, and a candlestick ten feet high by the same artist. In Louvain cathedral is a brazen font of the fifteenth century, with a beautiful iron crane for lifting and sup-

porting the cover ; also a "grille" to the sacrament house. A brass lectern of the fifteenth century and a font of the same material, cast in 1444 by Guillaume le Fèvre at Tournay, are in the church of Notre Dame at Hal in Brabant. Casts of these are at South Kensington (Nos. '72.-63, '72.-65). The most important work in bronze sculpture and of truthful beauty is in Bruges, the monument to Mary of Burgundy ; a work by "*Pierre de Beckere, orfèvre et fondeur de métaux à Bruxelles*" began in 1495, finished 1502. The effigy of the princess is of gilded bronze lying upon a black marble sarcophagus, the sides of which are enriched with enamelled coats of arms, &c. The companion monument to Charles the bold was the work of Jacques Jongelink of Antwerp in 1558, and is very inferior.

The sixteenth century produced many able Flemish sculptors and bronzists, one of the most famous of whom was Gian or Giovanni Bologna whose art was developed in Italy, and to whose works we have already referred in the Italian section of this handbook. Pietro Francavilla and others also studied in Italy, producing works of great ability in that and other countries. By Adrian Fries or Vries, an admirable artist in bronze, born at the Hague in 1560, is the fountain of Mercury executed previous to 1594, on which the figure of Jove's messenger is arrested in its upward flight by Cupid, who fetters his right foot. A bas-relief is in the royal collection at Windsor, the subject of which is Rudolph II. on horseback, surrounded by emblematic figures of philosophy, &c. This is probably the work of Adrian Fries. In the same collection is a fine group, Achilles carrying off Briseis, signed with a monogram composed of the letter F within an A ; probably the work of Franz Aspruck, a goldsmith of Brussels who worked at Augsburg about 1598-1603.

"Il Fiammingo," François Duquesnoy, was a native of Brussels (1594-1644) and an artist of great ability. He is particularly excellent in his representation of children, and for the admirable delicacy and softness that he imparted to the flesh. Some figures

after his models were produced in bronze, as the well-known fountain, the "*manneken-pis*," at Brussels. His works in ivory are renowned, and he executed some large statues in marble, as the St. Andrew in St. Peter's at Rome. John Michael Rysbrack, born in Antwerp, 1693, came to England, and, among other works, made an equestrian statue to William III. which is now at Bristol. He died in 1770. The lion until lately so conspicuous an object on Northumberland house was cast (some say, but it is doubtful) by Laurent Delvaux: who made a Venus in bronze, after the antique, now at Holkham. He worked in England about the middle of the last century.

Sculpture in the Low Countries at this period was quite equal in execution to that of the rest of Europe, maintaining her influence but partaking, at the same time, of all the meretricious manner of the period and indulging in it to the full extent. Arthur Quellinus of Antwerp, a pupil of Fiammingo, had certainly a feeling for art superior to the extreme manner of his day, and did important work in the town-hall at Amsterdam and elsewhere. We do not know of works by him in bronze. Excellent ornamental metal-work in bronze and brass was produced in the Netherlands, &c., during the last century, the style being for the most part modified by French taste in design and ornamentation. We have not space to enter into particulars nor may we refer individually to works in statuary of more recent date, many of which are of great excellence.

Our information in respect of the native metal-workers of Spain is very indefinite, and the sculpture of that country has yet to be accurately investigated and its history written. Much valuable information is scattered here and there in various works, but more remains to be learnt.

After the Roman power which extended so largely in Spain had declined we know little of what prevailed in the peninsula or may have preceded the Saracenic occupation of the country, by which Arabian architecture became predominant in its southern portion. Other influences had also worked in various districts, and from a

very early period. Her commerce with Phœnicia in the exportation of tin, copper, &c., and the existence of Punic settlements upon the coasts of Spain, would leave some mark, less distinct perhaps than that of Grecian and subsequently of Roman art; these again to be succeeded by that of Byzantium. Personal ornaments, &c., in the style known as Merovingian are also found in Spain. The earlier Arabian or Saracenic rule was followed by that of the Moors, during which the potter's art was so successfully practised. Throughout each and all of these periods there can be little doubt that admirable work in bronze and other metals was executed in Spain, influenced probably by the immigrant rather than the native artificers.

The fifteenth century saw Flemish and Italian *renaissance* as the predominant style, executed for the most part by Flemish artists, while from Germany a taste was introduced for carved, gilt, and coloured altar-pieces: some of these, modelled with Spanish sentiment and gorgeous in colour, produce a startling if not a satisfactory effect upon an eye educated in a purer school.

Enormous wealth had flowed into the country where, moreover, the church was all-powerful. Architecture and the sister-arts were abundantly encouraged, perhaps none more so than that of the gold and silver smith. But here again we find that the most important workers in those materials were the members of a German family named Arphe or Arfe; the first recorded of whom, Enrique de Arfe, settled in Leon about 1470.

The latter end of the fifteenth and early sixteenth century also saw Italian taste exercising a leading influence, and Italian artists working in and for Spain. Leon Leoni undertook commissions, and his son Pompeo passed some years in that country. Some native Spanish sculptors had perfected their art in Italy during the preceding or early in that century, among whom Alonzo Berruguete is famous for his works in the cathedral of Toledo, &c. Again, we hear of those by Esteban Jordan; of Juan de Juni; of Hernandez; of Alonzo Cano (1601-1667);

of Martinez Montanez; and of Pedro Roldau (1664-1700); Spanish sculptors; all of whom worked, more or less, in the Italian manner but with a Spanish sentiment, and, by the artists of later time, not without exaggeration in attitude and expression.

Of purely Spanish works in bronze of the fifteenth and sixteenth centuries we know very little. Doubtless some were produced of the smaller kind, but it is more probable that the productions of Flanders and the artistic bronzes of Italy supplied the demand from that class of society which was surrounded by luxury and splendour. Admirable arms, plate, and jewellery were wrought by Spanish hands, and the kindred art of the bronzist was surely not unknown, although it seems to have taken a secondary position and its history is as yet obscure.

Of later time we have on either side of the high-altar in the cathedral of Santiago pulpits richly adorned with reliefs and ornaments in bronze, the work of Juan Bautista Celma, about 1600. The great candelabrum known as "el tenebraijo" in the cathedral at Seville was the work of Bartolomé Morel, who also cast the large figure of Faith that surmounts the Giralda tower and acts as a vane.

Costly and overloaded ornaments and vessels of gilded metal in the most exaggerated *rococo* taste are met with in Spanish churches, &c.; but long-continued wars following upon the French revolution and an unsettled state of government and of society since, retarding the progress of commerce and of the industrial and finer arts, have left that noble country sadly behind her European sisters.

CHAPTER X.

BRONZE SCULPTURE, ETC. IN ENGLAND.

IN an earlier chapter we referred to the technical excellence of bronze implements, the productions of our prehistoric forefathers; the same characteristics of thorough workmanship, high finish, and accuracy, have since prevailed in all the metal work of British handicraft or manufacture. In no country have these qualities been surpassed, and in few have they attained an equal perfection. But it is of a mechanical rather than an artistic excellence that we may boast; and although our castings may be perfect, free from flaw or grit, we may not claim a forward place in the arena of the plastic arts. They are hardly native to us, and whilst some among our painters and engravers have been unsurpassed in "genre" and in the representation of natural scenery sculpture has not attracted so many English votaries nor inspired them with the highest qualities of invention or of plastic power. Neither do we believe that works of sculpture are so attractive or so comprehended by us, as a people; they do not appeal to us, in smaller or in larger form, as to more southern and continental nations; colour is more to us than form, and painted rather than modelled surface. Probably from its sombre tone bronze has not been a favourite material in England, and though we are rich in royal effigies of that metal, they have been with few exceptions gilded. Among sculptors in marble

we may justly feel proud of a few names well forward in the ranks of excellence.

Notwithstanding the Roman occupation and its civilising effect during some four and a quarter centuries it did not impart to us the art creative spirit and desire which that people had adopted from other and more gifted nations. But we had among us good bronzists and enamellers, and Celtic workers in gold, worthy to be compared with even Etruscan artists. Some among the rude Saxon hordes, who swept from before them all that remained of Roman institutions, were metal-workers of no mean ability. Ireland also had a strong influence upon our arts and civilisation in post-Roman times. So that before the Norman invasion England had many able workers in the precious metals, whose craft had been imported or improved through Teutonic and Byzantine influence.



BELL ; ELEVENTH CENTURY.

The curious and characteristic sculptures of the tenth and eleventh centuries at Chichester cathedral bear some impress of the antique manner. The font at Winchester and the reliefs at Shobden, as also the prior's gate at Ely, are native works in stone. Others succeed, and recumbent figures of knights and churchmen were stiffly fashioned in stone and Purbeck marble. Except in rarer instances monumental effigies on tablets of metal were engraved or incised rather than fashioned in relief, as was the case in Germany, the country where these brasses appear to have originated. In England they were extensively adopted by all the middle and higher classes of society, and their production would seem to have developed to a greater extent than in Germany or even in the Low Countries. The brass or latten plate, first imported from Germany and Flanders and known as "Cullen (Cologne) plate," was subsequently manufactured in England. In no country are these memorials so numerous as with us : and it is impossible to rate their archæological value too highly as memorials of the manners, dress, and architecture of former times ; or their importance as genealogical and historical records, for sometimes "their witness lives in brass" and in that alone.

The use of brasses extended from the twelfth century and has never since entirely ceased, a revival having again taken place within the last few years.

The addition of enamelling to monumental effigies and to brasses was not unfrequent, but always upon copper plates. In Rochester cathedral was the tomb of bishop Walter de Merton (1277), an enamelled work destroyed by the puritans. The earliest brass recorded in England was that of Simon de Beauchamp of 1208 ; the earliest still preserved is that of Sir John d'Aubernoun (1277) at Stoke d'Abernon in Surrey ; and one other of that century, 1289, Sir Roger de Trumpington's, at Trumpington near Cambridge. Perhaps the latest previous to the recent revival is in St. Mary Cray church, Kent, of 1776. Occasionally brasses were used a second time without fresh

casting; the plate was generally turned, and the effigy of the person to be recorded incised on the reversed surface, the engraving being adapted to the form. A few are in England, having on the reverse portions of earlier Flemish workmanship; they are known as "palimpsest brasses." Sometimes the original face was used, and the engraving altered and adapted for the new claimant.

The composition of a brass of 1504 was found on analysis to contain, copper 64·0, zinc 29·5, lead 3·5, tin 3·0.

Early English brasses are formed of separate pieces shaped to the outline of the figure, and inlaid to an even surface on a slab of stone. Foreign brasses, on the other hand, show less economy of metal; the large quadrangular plate, formed of pieces neatly joined together, being covered with richly-designed architectural incised ornament surrounding the effigy. The engraving on the larger number of English brasses was certainly the able work of native hands; but it is a curious fact that, with the trifling exception of a few initial letters or a mark, no names of individual artists have been transmitted by their own chisel. It has been suggested that, as the quantity was so great, they may have been produced by members of various guilds; if so, probably of silversmiths or of workmen who made the angle plates and clasps for choir-books and other things for ecclesiastical use.

Although the names of these English artists are not recorded it is reasonable to suppose that the founders of some of the royal effigies were also makers of brasses; and it is probable that certain bell-founders and latteners of the fifteenth, sixteenth, and seventeenth centuries, whose names we know, were also producers of these fine incised memorial slabs. Among them are Roger of Beccles in 1411; Richard Brazier, a bell-founder, of Norwich, who died in 1513; Silvanus Crue, 1658; and William Vaughan, 1671, who executed the finely-wrought busts of lady Mary Mostyn and lady Sarah Wynne in Gwydir chapel, Llanrwst,

Denbighshire. Edmund Colpeper signs a work at Pimperne, in Dorsetshire : "fecit, 1694." This last is of great elaboration, denoting a goldsmith's rather than a lattener's hand.

We have already expressed our belief that sculpture (representations modelled in relief, or in the round) has never been so highly esteemed nor is it so native to England as the sister-art of design ; painted, drawn, or engraved representation on the flat surface : and the fact that incised brasses were so abundantly produced and so generally adopted for monumental purposes in England in preference to sculptured effigies, during the long period of five centuries and in so much larger number than on the continent, would seem to strengthen that assumption. Some 4000 English brasses are still preserved, while probably at least as many more have been destroyed. In Belgium there are about sixty-three, in Germany perhaps one hundred.

As first observed by Strutt in his dictionary of engravers, there is great probability that from the finer of these incised brass plates, rather than from the silvers prepared for niello by later artists—the admirable goldsmiths of Florence in the fifteenth century—the first idea of engraving took its rise ; although the happy thought of printing numerous impressions from such works did not immediately occur.

Of early sepulchral effigies in the round, cast in bronze or a kindred alloy, we have in England some of the most remarkable in point of art and of historical interest. Not all, however, are the productions of English sculptors, although native metal and marble workers aided materially in their completion. William of Gloucester, a goldsmith of the middle of the thirteenth century, cast a silver figure of Catherine, the infant daughter of Henry III. (died 1257), long since lost from her tomb in Westminster abbey, but probably the first work of the kind executed in England. An image of silver to Gilbert de Clare was in Tewkesbury choir.

We must not fail to bear in mind that during the course of the thirteenth and fourteenth centuries numerous sepulchral effigies of knights in armour, of ladies, and of bishops were ably executed in Purbeck and other stone, probably by English hands. The Temple church, Salisbury, Durham, Winchester, Gloucester, and other cathedrals and churches, may be referred to as still containing examples of this class of sculpture ; and probably a much larger number has been destroyed.

Until the close of the preceding century the figures were rudely and stiffly modelled, but the influence of Henry II. and of the various foreign artists introduced by him—among whom probably were some sculptors—for the enrichment of the Confessor's shrine and other works in Westminster abbey, had greatly developed the plastic and other arts. Thus we find that the tomb of king John (died 1216) at Worcester is greatly in advance of earlier work, the life-like effigy denoting the chisel of an able hand.

The broken and neglected, and since maltreated tombs of Henry II. (died 1189) and of Eleanor of Guienne (died 1204) are at Fontevrault, doubtless the workmanship of French hands. There also is the tomb of Richard of the Lion Heart (died 1199), whose other effigy is still at Rouen ; John's queen (Isabella of Angoulême (died 1218) is also at Fontevrault, while that of Berengaria the queen of Richard (died 1219) is in Le Mans cathedral, brought from the abbey church of L'Espau. It is greatly to be regretted that these effigies, from beneath which the royal dust has long since been scattered, should have been "restored" and bedizened with garish colour, before placing them together in a corner chapel of the now prison church at Fontevrault.

The sculpture on the façade of Wells cathedral, that at Croyland abbey, at Peterborough, Lincoln, and Lichfield, and the work of William of Ireland and Alexander of Abingdon on the Eleanor crosses, must also be referred to as proving the ability of

some of our native artists: showing an excellence of style and execution that continued during the earlier half of the following century; but after that date we find alabaster more largely and frequently used.

The beautiful monument to queen Eleanor (died 1291) in Westminster abbey, around which one hundred wax lights were to burn on every St. Andrew's eve, is one of the finest sculptures of this period; the effigy is of gilt bronze, a work of almost unequalled purity and truth in conception and in execution. The head rests upon two cushions diapered in gilding with the arms of Castile and Leon, above which is a richly-wrought canopy of tabernacle work; a slab of bronze, diapered with gilding like the cushions, forms the top of the altar tomb and bears the inscription in Lombardic lettering on its edge; shields of arms in metal adorn the sides. Upon the bronze slab lies the recumbent figure. The marble or stone work was executed by Richard de Crundale in 1291. The bronze effigy was by master William Torell or Torel, goldsmith and citizen of London, for work upon which he received fifty marks in 1291; and it was completed in the following year.

By Torell also, and about the same period, was the effigy of Henry III. (died 1272) in gilded bronze, upon a tomb richly inlaid with mosaic and with slabs of porphyry and serpentine, next to that of queen Eleanor: a work also of great excellence in modelling and technical execution, and like the queen's not entirely in the round.

It has been often asserted that Torell was of Italian birth or origin; but, on the other hand, it has been shown that lands were held in Lincolnshire by one Torel as stated in Domesday book, and that the name Toroldus also occurs in reference to holdings in Suffolk and Essex. Again we find one William Torel, son of William Torel just deceased, recorded in "*Excerpta e Rotulis finium*" 6th Henry III., 1222, as holding lands in Essex and Hertfordshire. It may therefore be fairly argued that the

artist of the tombs in question was if of another family yet English born.

The monument to Grosseteste bishop of Lincoln (1253) "had an image of brass over it." Next in date and the only monument of its kind still remaining in England (but not of English workmanship) is the tomb at Westminster of William of Valence (1296). This is by artists of Limoges; a stone altar tomb surmounted by one of wood, with niches in the sides formerly enriched with statuettes; upon which reposes the recumbent effigy, of wood, plated with copper, gilt, and richly enamelled, but inferior in modelling to the work of Torell.

We have already referred to the tomb of Walter Merton, bishop of Rochester, the work of magister Johannes Limovicensis, and we know that at that period much enamelled work in vessels, coffers, &c., was imported from France into this country under the influence of the court, and that English goldsmiths, able of their craft and much patronised during the reigns of Henry, of Edwards II. and III., and Richard II., also acquired and practised the art of enamelling. These men worked not only in the more precious metals, but vessels of various kinds were fashioned in bronze and latten, and occasionally inscribed in Lombardic and subsequently in "Gothic" character. One such is inscribed, "*Vilelmus Augetel me fecit.*"

Edward III.'s (died 1377) tomb in Westminster abbey was probably the work of Torell's pupils—the face of the effigy perhaps cast from a mould of the features—but it has not the excellence of the master's work, and the remaining smaller figures on the sides are still less to be admired. Enamelled copper shields, blazoned with the royal heraldry, adorn the lower tomb; on either side of the effigy are piers with niches containing angels and supporting the rich canopy above the head.

The tomb of the Black Prince (died 1376) is in the glorious cathedral of Canterbury. The somewhat stiff but ably modelled

and highly elaborated cast and gilt bronze figure, in full relief, lies on its table, the face calmly expressive, the figure in chain armour ; some of the details are enriched, the crown with jewels, the sword girdle, the spurs, &c., enamelled, as are the armorial shields and mottoes affixed upon its sides. We do not know who was the able bronzist, but the work by some authorities is supposed to be foreign. We next have the tomb of Richard II. and his queen, Anne of Bohemia, with their effigies, executed during the king's lifetime by Nicholas Broker and Geoffrey Prest, coppersmiths of London ; "images, likenesses of the king and queen, of copper and laton gilded." These figures, again, are cast in high relief rather than in the round, and are affixed to a bronze slab covering the marble altar tomb. Like the other tombs at Westminster the marble work and ornamentation have been sadly defaced, but the effigies are remarkably preserved. The brasses to Robert de Waldeley (1397) and to Alianor de Bohun (1399) in Westminster abbey are noteworthy ; also the brass figures of a man and wife, of life size, in the chancel at Ingham.

The Lancastrian house did not develop or encourage the higher arts in England, and during the period of its power native art seems to have been on the decline ; nor indeed until Flemish influence became dominant did sculpture and metal work revive. But there was no lack of liberality shown in the erection of the monument to the fifth Henry, the wooden core of whose effigy, stripped of its covering silver plates and its massive head cast in the same metal, is all that is left to us by robbers of the time of the Reformation.

Perhaps the finest work in stone sculpture of this period in England is the tomb to lady Arundel, at Chichester ; this was carved in the earlier years of the century. Wykeham's tomb at Winchester is also noteworthy. At Warwick is the grand tomb of earl Richard Beauchamp, who died in 1439. This was the work of English hands, John Essex, the marbler ; William Austin, the founder ; Thomas Stevens, the coppersmith ; who engaged to

execute the work, on the 13th June, 1453, "of the finest latten," that is, "to cast and make the image of a man armed" and "fourteen embossed images of lords and ladies in divers vestures called weepers." But, as in too many other instances, the means and the material were at hand but the heart was wanting; although pretentious and grand in design, the modelling and execution of the figures are poor and careless.

With Henry VII. we enter the sixteenth century, when the Italian *renaissance* was extending its influence far and wide. His will, dated in 1509, gives full instructions for the erection of his monument, the effigy upon which we have already referred to as the work of Torregiano. The tomb is surrounded by a "brass gate in the manner of a closure of coper and gilte," which was begun during the king's lifetime and before the casting of the effigy. "Humfray Walker, founder, and Nicholas Ewen, copper-smith and gilder," were employed, and all this portion may probably have been the work of English artists. It is adorned with statuettes in niches, but of very inferior modelling and workmanship to the effigies and statuettes upon the tomb, the style of which denotes the Italian master's hand. Torregiano is said to have also executed a bronze effigy of the earl of Derby for Ormskirk church, Lancashire.

During the following reigns we find painting and ornamental design mainly under the pencil and teaching of Hans Holbein; and sculpture by Florentine artists already named, while some Flemish influence supervenes. Noble tombs were executed in marble and alabaster, as that to Sir Giles Daubeny in Westminster; to the countess of Hertford in Salisbury cathedral; to queen Elizabeth (by Maximilian Poutram), and Mary of Scotland, &c. Brasses were still abundantly used for sepulchral record, incised for the most part by able English hands, who also produced good examples in the various forms of the jeweller's and silversmith's, the worker's in brass and copper, and the smith's crafts; but in design they were almost always subservient to

foreign teaching. So indeed it continued, more or less, during the period of the Stuarts and of Cromwell.

By Nicholas Stone, a famous sculptor, are the figures of Sir George Villiers (died 1605) and his second wife in St. Nicholas' chapel at Westminster. There also, in Henry VII.'s chapel, are two huge monuments, typical of the grandiose but bad style of the seventeenth century, the details of which are executed with care and ability. One to George Villiers, duke of Buckingham, was erected in 1633 and is rich in gilded metal and elaborate marble work above, beneath, and around the recumbent figure ; the other, still more pretentious, is in memory of the duke and duchess of Richmond, 1623 ; beneath a baldachin of open gilded metal work, sustained by bronze allegorical figures at the four angles, and surmounted by a gilded one of Fame.

The bronze statue of James II. in Whitehall yard, set up in 1685, was by Grinling Gibbons (1648-1721) the celebrated wood carver, of Dutch origin. The portico of Drury-lane theatre is enriched by a leaden figure of Shakespeare cast by Sir Henry Cheere, "the leaden figure man at Hyde-park corner," after a model by his master, Peter Scheemakers (1691-1770), by whom also was the statue in bronze to Edward VI. at Guy's hospital. By Cheere, again, were cast some bronze busts of eminent fellows of All Souls college, Oxford, and the statue of Christopher Codrington, the founder of the library in which they are placed. The equestrian statue of the duke of Cumberland in Cavendish square is also by Cheere. The bronze figure of Henry VI. at Eton college was by Francis Bird (1667-1731).

Bird worked under Sir Christopher Wren at St. Paul's, executing the *alto-rilievo* in the pediment representing the conversion of that saint ; the statue of queen Anne, and other works in stone. John Van Nost, an Englishman but of Dutch family, worked in Ireland from about 1750 to 1787, where he made the equestrian leaden statues of William III. and George II. in College green and Stephen's green.

Although open to criticism in the conception and surroundings of its principal figure, the group in bronze at Somerset house by John Bacon R.A. (1740-1799), perhaps the most clever and purely English sculptor of his time, is very ably modelled. It represents George III. with a fine recumbent impersonation of the river Thames, and is one of the few satisfactory monuments in this material with which London is but so poorly furnished; the noble statue of Charles I. always excepted. By his second son, John Bacon (1777-1859), the equestrian bronze statue of William III. was set up in St. James's square in the year 1808.

William Pitts (1790-1840) was a clever modeller who produced many figures, groups, reliefs, and models for silver work, in which he was also an able manipulator. In Cavendish square is a bronze statue of the duke of Portland's third son, Lord George Bentinck, larger than life size, the workmanship of Thomas Campbell (1790-1858).

The greater number of bronze statues erected in public places of London during the present century were works by Westmacott and Chantrey. By the former, Sir Richard Westmacott (1775-1856) are the "Achilles" in Hyde park, a figure almost copied from one of those antiques on the Monte Cavallo at Rome, known as Castor and Pollux; a statue to the duke of Bedford in Russell square; of Ch. J. Fox in Bloomsbury square; and that to the duke of York, surmounting the column at the Carlton steps. The statue of Canning in the New Palace yard, Westminster, was the work of his son, professor Westmacott R.A. By Sir Francis Chantrey (1781-1842) are the bronze statue of William Pitt in Hanover square; the ill-conceived equestrian statue of George IV. at the north-eastern angle of Trafalgar square, and that of the duke of Wellington at the Royal exchange.

Patrick McDowell R.A. of Belfast (1799-1870) was an able artist; by him are the bronze statue to the earl of Belfast, erected in that city in 1856; and one to viscount Fitzgibbon at Limerick,

in 1858. He produced some other works in bronze for the houses of parliament, but his marble group, emblematical of Europe, at the base of the Albert memorial is perhaps his most important work. The figure of Thetis, a bronze, was the work of William Theed R.A. (1764-1817), who executed various models of groups, vases, &c. for Messrs. Rundell and Bridge, the silversmiths, working for them during the course of fourteen years and exhibiting at the Royal Academy. Ed. Hodges Baily (1788-1867), a pupil of Flaxman, was also employed by that firm as chief modeller. An equestrian statuette in bronze of George IV. at Windsor castle is probably his work. He subsequently produced the "Eve" in marble, and other well-known figures and monuments in the same material. The statue of the duke of Kent at the top of Portland place was by Sebastian Gahagan, about 1830.

The equestrian bronze statue to George III. in Cockspur street was the work of Matthew Coates Wyatt (1777-1862), and although open to criticism is not without merit. By him also was the ungainly—if not worse than ungainly—equestrian statue of the duke of Wellington which surmounts the arch at Hyde-park corner. This colossal figure, important for its size and weight, was begun in 1840 and was the work of three years; over 100 tons of plaster was used for the model, &c.; it is formed in about eight pieces, screwed and fused together, and weighs some forty tons. The dimensions are: nearly 30 ft. in height; girth of the horse, 22 ft. 8 in.; length from nose to tail, 26 ft.; length of the horse's head, 5 ft.; of each ear, 2 ft. 4 in. It was erected in September, 1846, at a cost of about £30,000. Would that the shades of Verrocchio and Leopardi had inspired the mind and directed the hand that modelled at such cost a group, so grand in its heroic subject, so abounding in material and means of execution!

The bronze statue of Lord Herbert with the bas-reliefs upon its base by Foley, erected in front of the war office in Pall Mall,

is an able work. So also is that to Sir John Franklin in Waterloo place, by Noble. That to Sir H. Havelock in Trafalgar square, by William Behnes, cannot be considered as successful ; nor can the statue of Sir Charles Napier on the same unfortunate site, doomed by the fates to modern artistic catastrophe ; this last was the work of Adams.

Central here, but in discord with its various surroundings, rises the Nelson column, noble in dimensions and boasting a brazen capital, while on the four faces of its base are *rilievo* representations in bronze of events in the great hero's life ; northward, the battle of the Nile, modelled by W. F. Woodington ; southward, the death of Nelson at Trafalgar, by C. E. Carew ; eastward, the bombardment of Copenhagen, designed by Ternouth ; westward, the battle of St. Vincent, commenced by Watson and finished by Woodington. The figures are of life size, the metallic weight five tons. At the four angles are couching lions, modelled by Sir Edwin Landseer and cast in a mixed metal, said to be bronze ; but neither as models nor in beauty of surface or execution do they partake of those qualities that are characteristic of the capabilities and excellences of bronze as a vehicle for sculpture.

Vast in dimensions, material, and cost, thankofferings of a willing and grateful people to the memory of our greatest modern heroes, those two huge monuments to Wellington and Nelson, not executed in momentary haste but tardily, are small indeed and painfully deficient in the one most needful quality, artistic worth.

Why did the spirit of creative sculpture stand coldly by, nor lend her aid for such exalted themes, adding untold value to the nation's gift by the immeasurable and deathless stamp of genius ? She could not have been there ! Our mechanical and manipulative faculties, well exercised and trained, were ready for the casting and execution of the metal work ; but the master artist, so longed for, was sought in vain.

Nor is the "Guards' memorial" in Waterloo place, designed by Bell—a group of guardsmen among trophies of cannon, &c., over whose heads Fame or Honour flings away coronals, all in bronze upon a granite pedestal—worthy of the brave soldiers it records.

Let us hope that the fine gothic memorial to Albert the Good may mark the period of a new *renaissance*.



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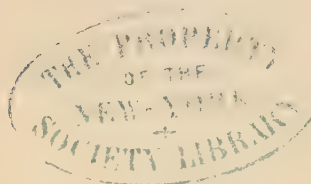
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